JUNE
5
1959

PETROLEUM WEEK

A McGRAW-HILL PUBLICATION

Oversupply tops oil congress topics 13
Import changes will cut most quotas 16
Russia reports on explosive drilling 23
Gas plugs water zones in air drilling 26
Gas turbine makes drilling debut 28
Aruba starts up largest water plant 38
Energy 'swaps' pay off for refiners 44
St. Lawrence: Outlet for Canada's oil? 48
New 'desert' rig to be used in Libya 52
Increase in autos worries marketers 60
Soft markets foster special deals 62

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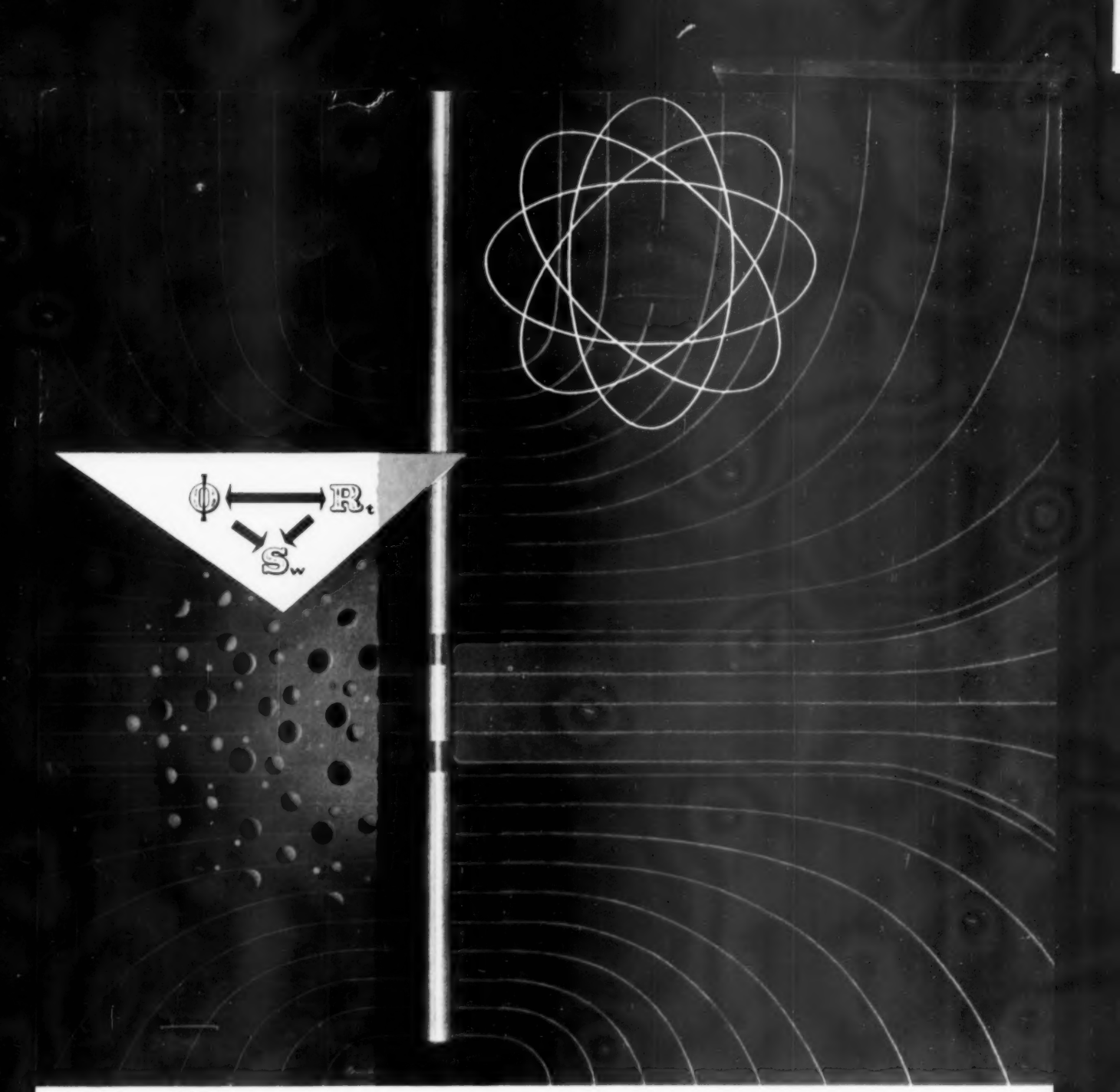

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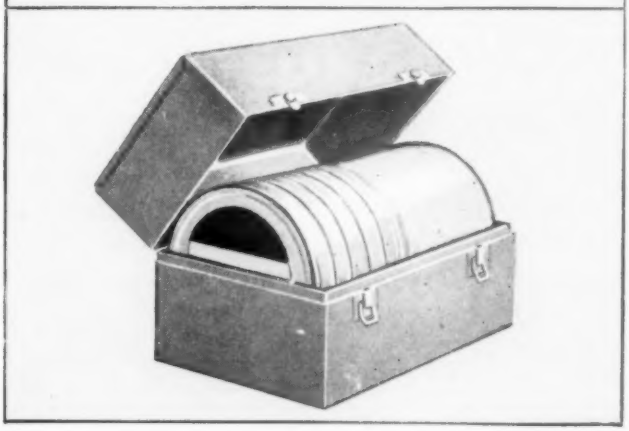

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TWO NEW MOTION PICTURES, "Preventing Carburetor Icing" and "Preventing Carburetor Deposits," are the tenth and eleventh films in Ethyl's Automotive Series—a training kit that gives oil company marketing personnel a solid background on fuel-engine relationships.

The film on carburetor icing includes discussion of engine stall due to icing in non-freezing weather, ice formation and the subsequent blocking of idling air flow, and the effect of gasoline volatility on icing.

Then the film illustrates the prevention of icing by means of a surface-active additive put into the gasoline at the refinery, and how such an additive works.

The second new film covers the nature and source of carburetor deposits, their effect on carburetor operation and their removal by the costly boil-out method.

Then, in contrast, it discusses removal and prevention of deposits while driving, by means of a surface-active detergent additive put into the gasoline at the refinery.

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INSIDE *Slant*

EARTH SCIENCES CENTER

There can be a greater future to geology provided it is expanded into a larger sphere of operations: Earth Science.

This long has been the viewpoint of Maury M. Travis, Denver, Colo., geologist. And he now may see his dream come to pass through a gift of $2.5-million to Massachusetts Institute of Technology for an Earth Science Research Center.

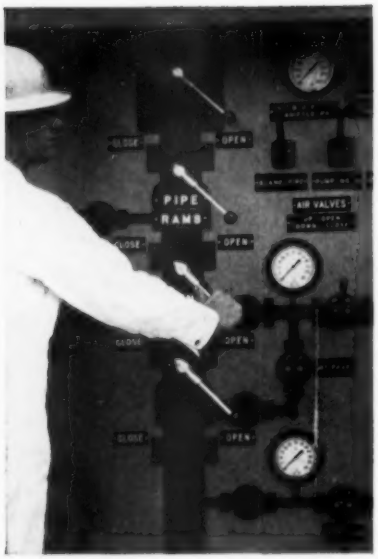
The gift was made by Cecil Green, vice-president of Texas Instruments Inc., and honorary board chairman of Geophysical Service Inc., Dallas.

Early in 1958, Travis wrote PETROLEUM WEEK: "Oceanology (a combining term for oceanography and geology) stands ready to help find the ever elusive stratigraphic traps. But first, geologists must begin formal attack on the study of recent marine sediments."

It also was his opinion that geology in the past has been too parochial a science; too limited in scope. He expressed the same viewpoints on geophysics, geological engineering, and mining geology, as well as others.

Now, everything that Travis has advocated will be embraced at the MIT Earth Science Research Center.

LeRoy Menzing
EDITOR



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DEPT/Opinions

Views That Make News . . .

"I feel safe in saying that the Communist oil industry is not really a challenger to the Free World's oil industry. It is more in the nature of a gadfly, buzzing all over the place and administering a sting here and there as opportunity presents itself. This can be most annoying, but it is hardly ever fatal."

—H. T. KESSLER
Manager of Economics
Mobil International Oil Co.

"Attacks upon big business, by erroneously attempting to identify bigness with badness, not only contribute to political division at home; worse, they do damage to our country abroad. At home our people can look about them and form their opinions on the basis of what they see and experience themselves. But when a politician in our own country, in speaking about American business, uses terms such as "monopolies which are exploiting the people," extreme nationalists and communists abroad pick up the statement and use it to depreciate the United States itself."

—EUGENE HOLMAN
Chairman of the Board
Standard Oil Co. (N.J.)

"These developments [the general upturn in oil operations] justify President Eisenhower's confidence that the domestic industry, under stable conditions, will make the investments for the exploration and drilling to find and make available the oil required for an expanding economy and the nation's security."

—GORDON SIMPSON
President
Independent Petroleum Assn. of America

"Pipeline transportation is one service which has been reduced in price over the past five years, whereas almost everything else has been going steadily up. Good, healthy competition and improved efficiency of operations is the answer."

—E. W. UNRUH
President
Sinclair Pipe Line Co.

"Imports of Venezuelan oil are necessary to supplement U. S. production and are essential not only to the national security of the U. S. but to the defense of the Western Hemisphere as well."

—A. T. PROUDFIT
President
Creole Petroleum Corp.

. . . and Letters

Dear Sir:

I was quite awe-inspired after reading the opinions of 50 learned champions of capitalism [PW—May 15'59,p78] that one of the biggest threats to the petroleum industry in the next 50 years was omitted by 49 members and inaccurately mentioned by another, an outsider so to speak, the automotive industry.

Whereas some 40% to 50% of crude is refined into gasoline, and whereas small percentage losses of this volume to competitive propulsion systems, namely electricity, would more than upset the delicate balance explained by the survey, it seems that the subject warrants further investigation.

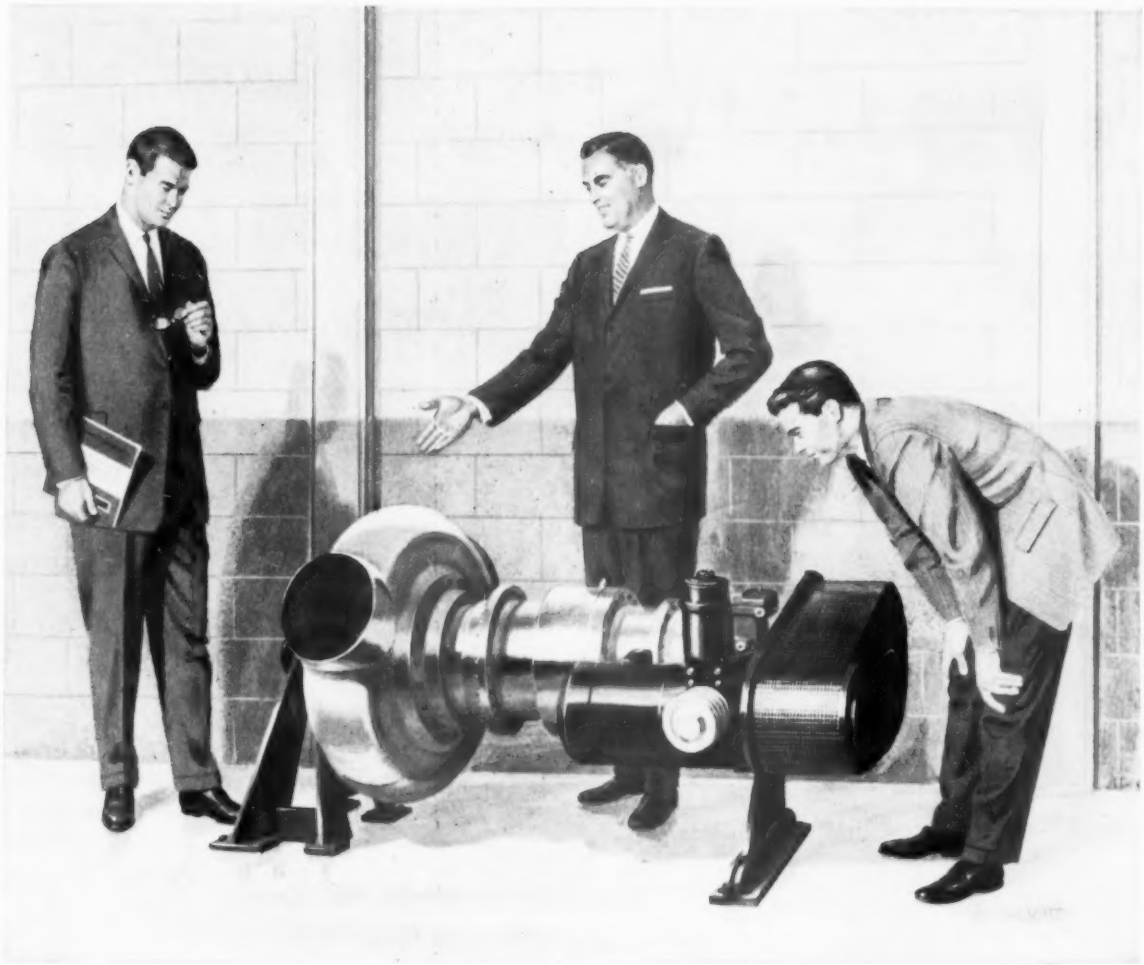
First of all, the modern electric car is an existing reality. The Deane L. Van Noy "Volts Wagon" has been well publicized, showing the many advantages and, of course, some present-day disadvantages. Secondly, the Cleveland Vehicle Co. . . . [was] to have [had] a prototype by April of this year. To turn one's back on developments such as these may indeed be like telling Mr. Edison that his light bulb "won't sell."

Now everybody should realize that conventional battery power is only a stay of execution until the arrival of a permanent power source from the advancements in the thermocouple, atomic electric batteries, and/or solar batteries. It is my understanding . . . that if as much progress is made in the next ten years (or sooner) as was made in the last ten, more-than-adequate, cheap, permanent-type electric power will be available for competitive uses. Considering all the governmental spending and the massing of intellect in these directions, it is very hard to see how they would not get results.

It would appear to me that our industry in "its moment of time" might well re-examine its "hole card."

GRAHAM R. CURTIS
Wichita, Kan.

PETROLEUM WEEK *will publish reader comments each week. Address letters to LeRoy Menzing, Editor,* PETROLEUM WEEK, *330 W. 42nd St., New York 36, N. Y.*



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SOLAR'S NEW 1100 HP SATURN engine represents an important forward step in gas turbines. Advantages of the new power plant include these: it is extremely lightweight, averaging less than 1/10 the weight of conventional engines; it occupies only about 51 cubic feet; it starts instantly and takes full load without laboring in temperatures from −65F to 130F—even after long periods of standby service. In addition, the new Saturn engine offers an unequaled advance in gas turbine fuel efficiency, and it will operate on a great variety of fuels.

Today, proven-in-service Solar gas turbines—ranging from 50 to 500 hp—are creating new standards of performance and reliability. As propulsion units for speedy boats, as a power source for electric generators, as ground support units for advanced jet aircraft, as high-efficiency pumps and in other applications . . . Solar gas turbines are saving time and money for hundreds of satisfied users. Why not investigate the Solar family of gas turbines for *your* power needs? Write today to Dept. G-122, Solar Aircraft Company, San Diego 12, California.

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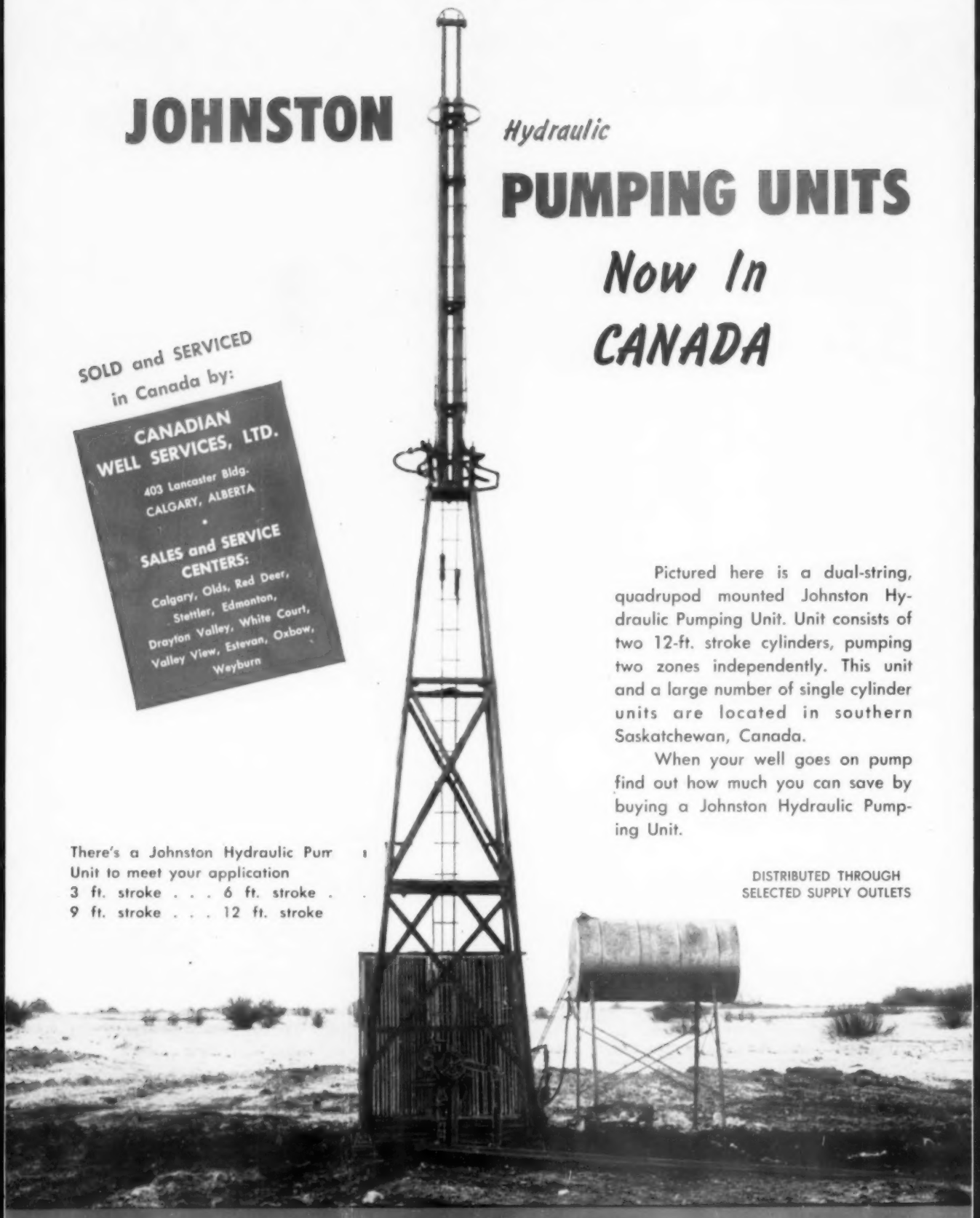

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60-Second Summary / WHAT'S HAPPENING IN OIL

June 5, 1959

dept/INDEX

Production	23
Transportation	48
Processing	38
Marketing	59
Washington	21
Statistics	61
The Market Trend	62
Key Prices	63
Editorial	68
International	52
Personals	66
Service & Equipment	64

About the only concrete solution offered to the present world surplus of oil amounts to "cartel" controls. Regulation of output and prices by producing nations is urged by Saudi Arabia's Abdullah Tariki, backing a Venezuelan plan. . . . p. 13

•

Improved electrodrills and turbodrills and a new "explosion" drill were reported by Russia at the Fifth World Petroleum Congress. The explosion technique makes hole by blasting special charges in a liquid column. . . . p. 23

•

Two Montreal refiners are considering moving western Canadian oil by the St. Lawrence Seaway. It would be a combination pipeline-water movement aimed at lowering delivered prices in eastern Canada. . . . p. 48

•

Socony Mobil will soon use a new medium-depth rig in Libya designed for desert drilling. It features easy mobility across varied terrain, and fast rig-up time. . . . p. 52

•

Signal Oil & Gas Co. will become a Gulf Coast refiner by acquiring Eastern States Petroleum & Chemical Corp. With growing production abroad, Signal has been expanding rapidly in recent years. . . . p. 18

•

More refiners are entering into energy-swapping agreements with utilities. They can improve their thermal efficiency by exchanging refinery fuel for steam, electricity, and treated water. . . . p. 44

•

Some large companies are wondering if too many cars on the roads could have a bad effect on gasoline demand. The saturation point generally is years off, but in a few cities it may be close at hand. . . . p. 59

•

A $50,000 gas turbine engine is being used to power a rig. The air-cooled engine develops 500 hp. and weighs only 2,859 lb. It powers a trailer-mounted 5,500-ft. rig and can operate on several fuels. . . . p. 28

•

The largest unit for distilling sea water will go on stream in Aruba shortly. The multiple-effect system will also generate marketable electricity, reducing the actual water-treatment cost substantially. . . . p. 38

•

Field prices of gas are too low to generate capital for exploration, says John G. Winger, of the Chase Manhattan Bank. It could mean a shortage of U. S. gas some day. . . . p. 18

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Up to the Minute / SIGNIFICANT LATE NEWS

June 5, 1959

Excessive refinery runs of recent months came back to haunt the industry this week in the form of lower gasoline prices. Cargo prices on the Gulf Coast dropped from 1/8¢ to 3/8¢ a gal., lowering 100-octane premium to 12 1/4¢ and 90-octane regular to 10¢ a gal.

The contraseasonal price reduction surprised few. Gasoline demand in May, while 3.4% above last year, was below the trend for the year to date (page 61). And because of high runs, stocks last month declined at the rate of 232,000 b/d, compared with nearly 300,000 b/d last May.

Some economists predict the cut may be only temporary. They foresee a complete "correction" to the gasoline surplus by mid-August, depending on two important Ifs—if the Texas Railroad Commission holds to 11-day allowables in July and August, and if refiners keep runs below 7.8-million b/d.

•

Oil "lobbyists" are being blamed for the California legislature's defeat of a 2% severance tax bill. The measure, demanded by Gov. Edmund Brown, would have hit primarily oil from out-of-state areas. Brown warned that the industry is "headed for trouble—and the trouble is deserved."

•

The Small Business Administration may go to bat for small refiners on import allocations. SBA officials, acting on a plea from Texas American Asphalt Co., which is also seeking a permanent injunction against mandatory controls, are studying the program to determine if "adjustments" can be made to aid small refiners.

A bill to regulate imports appears caught in congressional committee crossfire. Sen. Joseph C. O'Mahoney (D., Wyo.), who introduced the bill spelling out Congress's intent for implicit controls, wants it to stay with the Senate Interior Committee. But Sen. Harry F. Byrd (D., Va.) wants the bill in the Finance Committee.

•

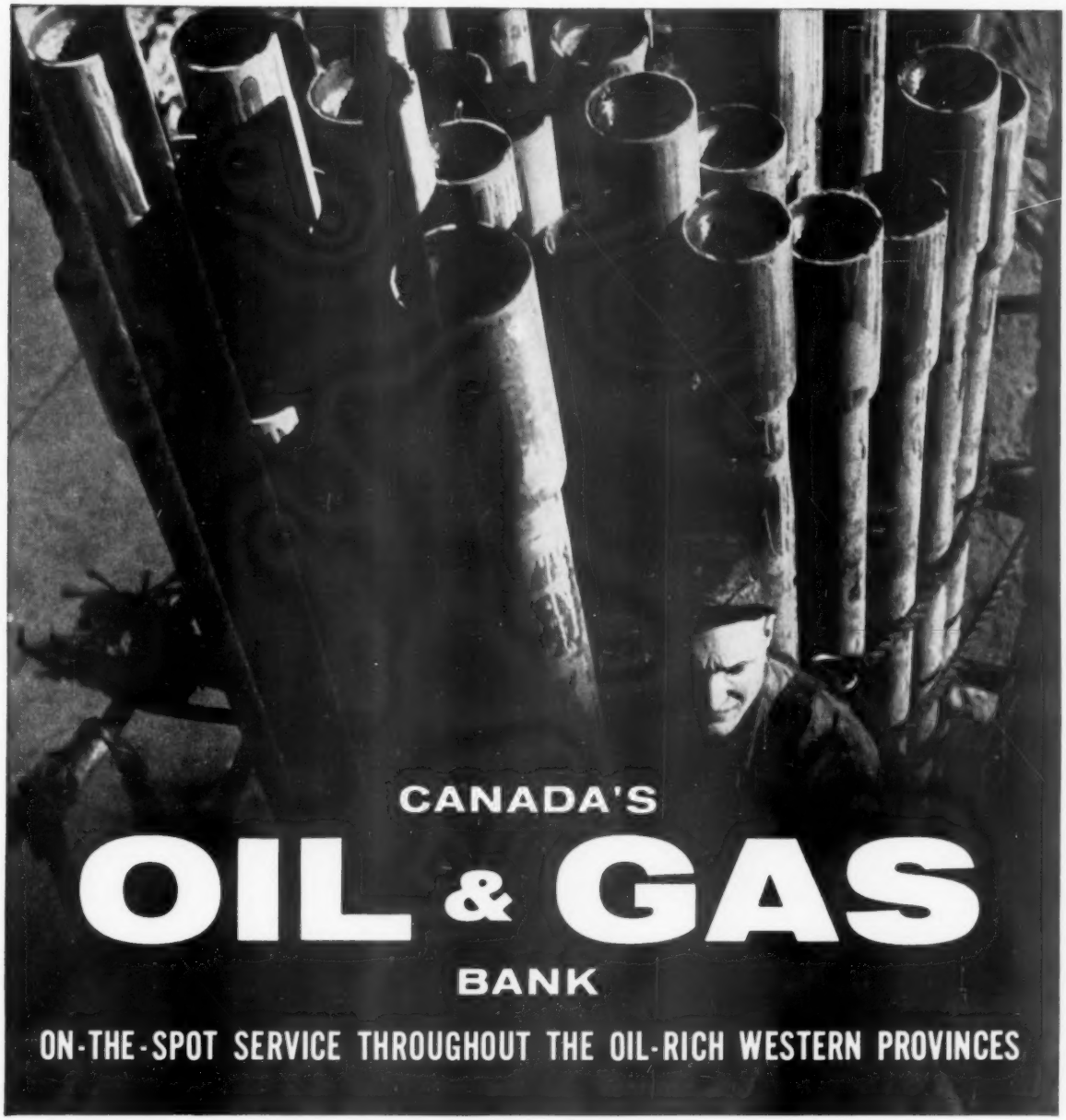
Texas Gov. Price Daniel vetoed a bill providing for "de novo" court appeals of administrative agency rulings. Such appeals, based on alleged errors in methods and procedures, would "completely disrupt" oil and gas conservation actions of the Railroad Commission, Daniel said, by creating inconsistencies in application of conservation laws.

•

Phillips Petroleum Co. has farmed out five blocks of Louisiana offshore leases to Tennessee Gas & Oil Co. The leases, totaling 21,081 acres, have five gas-condensate producers. The Cumberland Corp. subsidiary has agreed to an extensive exploration and development program.

•

Trunkline Gas Co. had to take a reduced rate to get Federal Power Commission approval of its expansion in Illinois. Its proposed rate to two distributors was 45 3/4¢ per Mcf., which FPC cut to 40¢.



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A list of current Oil and Gas bulletins covering regulations, tariffs, financing, statistics and kindred subjects pertaining to the Canadian industry is available on request. Write The Royal Bank of Canada, Oil and Gas Department, 409 Eighth Ave. W., Calgary, Alta.

We do not provide information on oil securities

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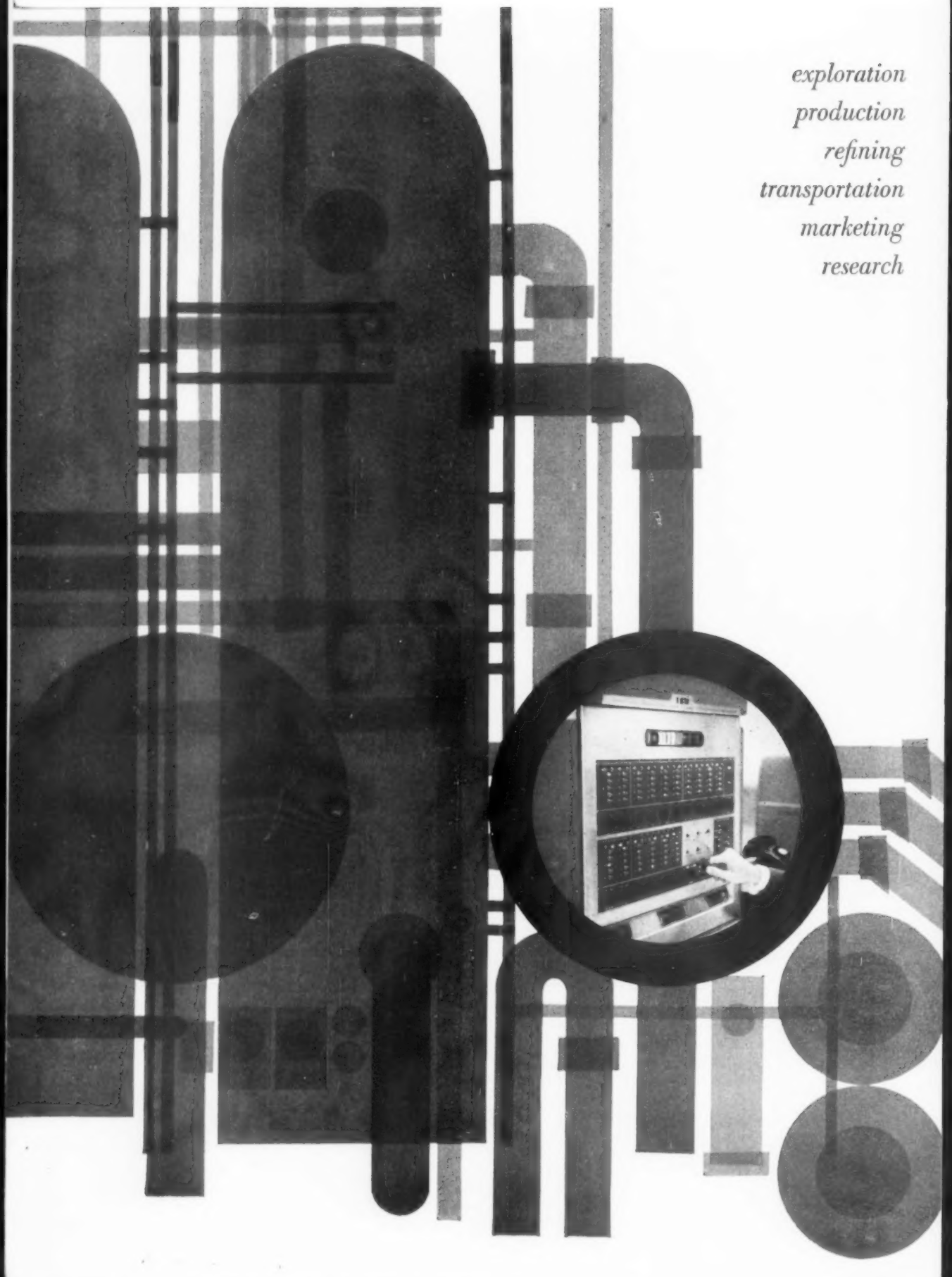
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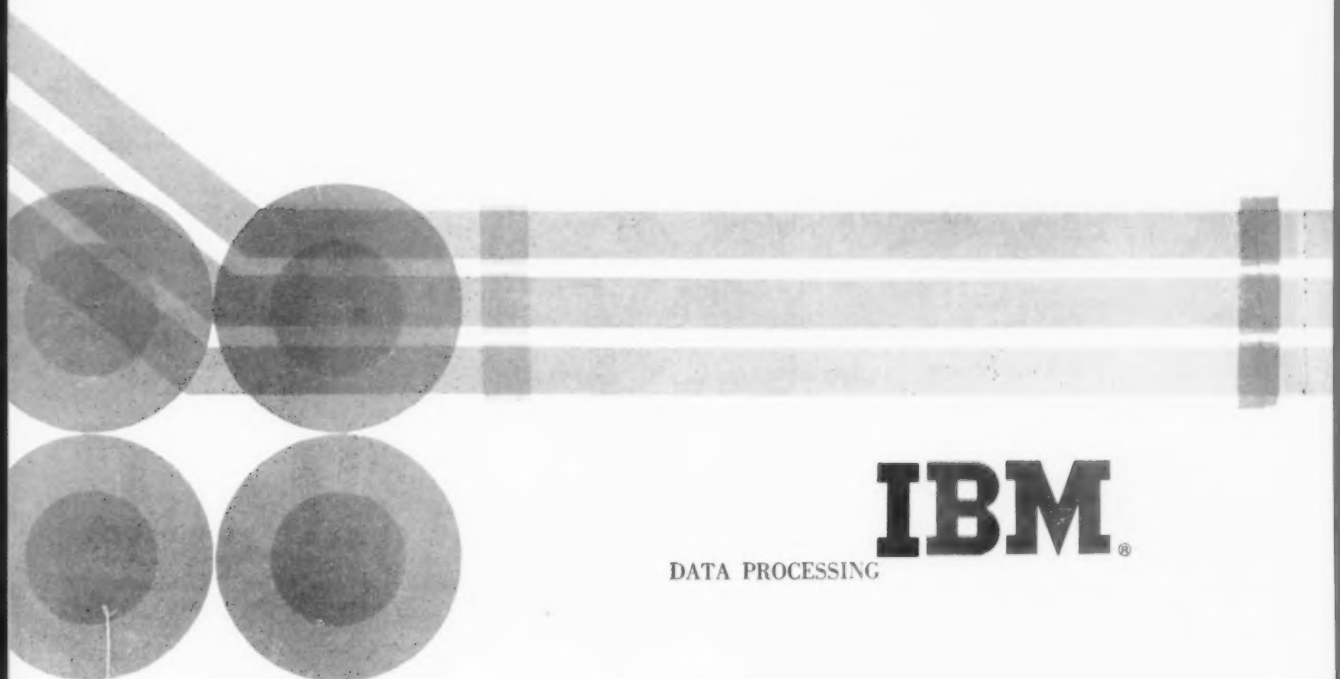

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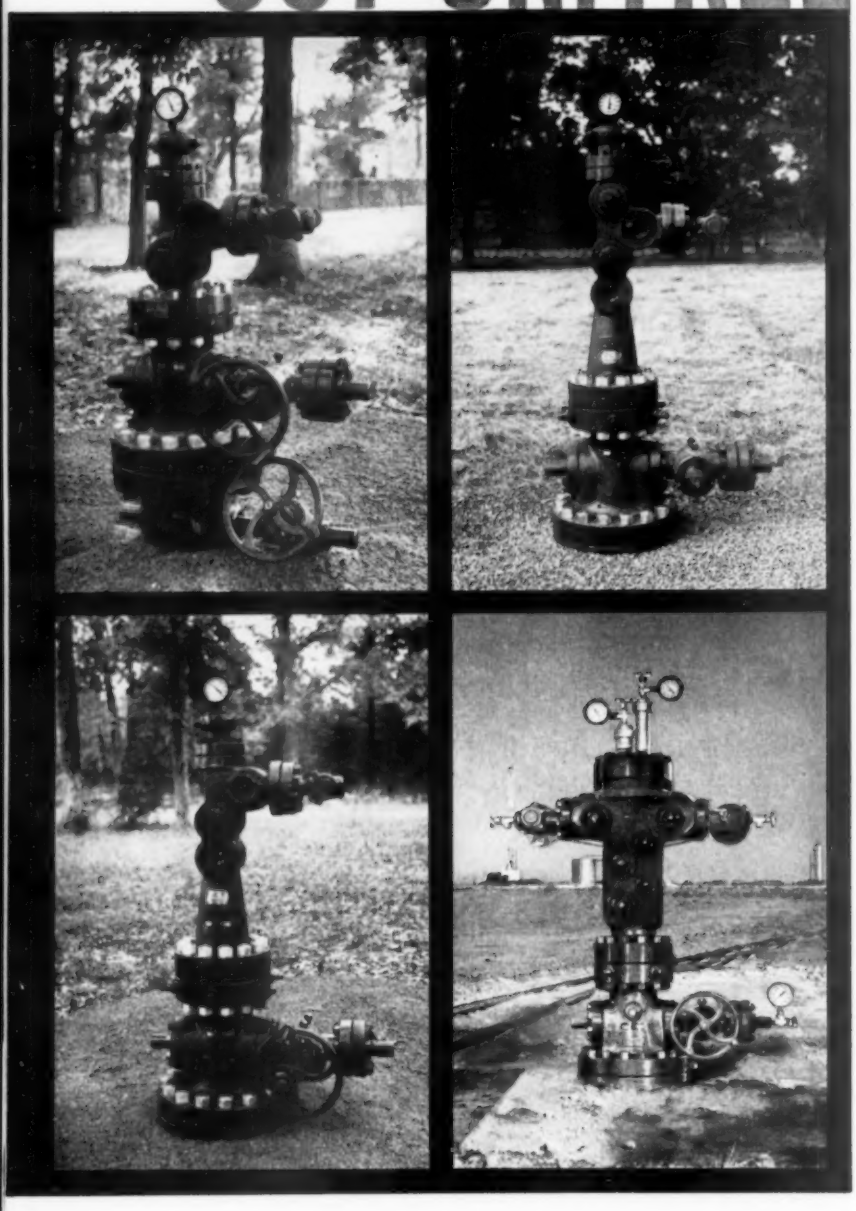

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PETROLEUM WEEK
June 5, 1959

Are World Curbs on Oil Feasible?

The world oil surplus—and what to do about it—was the No. 1 topic of conversation among delegates attending the Fifth World Petroleum Congress this week. But few had any concrete solutions to offer.

For the most part, the oil men from nearly all parts of the world came to listen for any realistic proposal that would ease the pressure caused by the oversupply—a situation that has plagued the world oil industry for most of the years since World War II.

The only general agreement that could be found among oil men interviewed by PETROLEUM WEEK reporters was that the present surplus situation is the worst yet.

One of the few men with a specific proposal was Saudi Arabia's Abdullah Tariki, who said exporting nations must restrict production and stabilize prices.

The 40-year-old Tariki, director of Saudi Arabia's Office of Petroleum Affairs, made it clear that he agrees "one hundred percent" with the recent proposals of Dr. Juan Perez Alfonzo, Venezuela's Minister of Mines & Hydrocarbons.

During his trip to the Arab Oil Congress in Cairo, Perez urged the major oil exporting nations to reach some agreement on restrictions on production and for the stabilization of petroleum prices (PW—Apr.24'59,p16).

Venezuela has already started action to establish its own production and price controls over producing companies. Those controls, established by a regulatory commission, will be enforced on companies by fines and, if necessary, by additional power which will be requested of Venezuela's Congress, according to Perez.

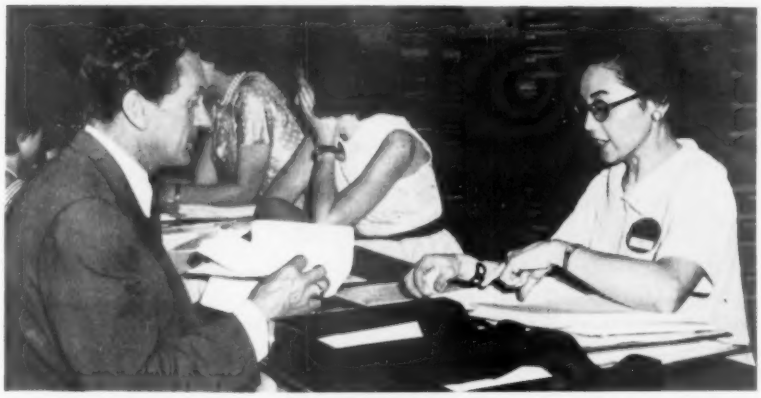
The Venezuelan action could be the start of similar moves elsewhere.

Producing countries, said Tariki, have the ability to prevent oversupply. He explained:

"The entire oil surplus supply comes from the Middle East and Venezuela, all from countries which depend on petroleum for some 90% of their revenues. Therefore, these governments have a big stake in seeing that prices for their oil are not weakened by excessive exports.

"The way to prevent excessive exports is simply by controlling production in their own countries. How can these governments allocate production among themselves? That's easy. For example, they could take the 1958 shipments to various markets, and set quotas on that basis, allowing only for an increase equal to the growth in demand."

Tariki said only producing countries should participate in this program, and not consuming countries.



FIRST REGISTRANT: John J. Wright, terminal superintendent for Standard-Vacuum Oil Co., Hong Kong, was the first to sign in for the Fifth World Petroleum Congress.

Tariki's main goal at the moment is to try to persuade the Iranian government to go along with production controls, rather than to press for higher and higher exports.

If Saudi Arabia and Iran could get together, he said, the Iraq government would probably go along. Then, he said, Kuwait would be "sure" to join in any joint Middle East oil policy.

After that, the Middle East group could "easily work out a joint program with Venezuela."

Other Middle East delegates, however, were clearly skeptical of the production control proposal.

One key Middle East government oil representative, who declined to be quoted, said such a scheme would merely mean that Middle East countries would lose markets to third supply sources "such as Soviet Russia, the French in Algeria, Libya, and so forth."

This delegate said he feels the best way to solve the world surplus would be for the United States to "remove all import curbs."

He said this would mean an extra market for Middle East oil of some "million barrels a day, and, in no time, with the growth in world demand, there would be no surplus at all."

When asked about the impact on the U.S. domestic producing industry, he replied: "Why should the U.S. protect five-barrel-a-day wells that are obsolete? That's like saying let's not build railroads because what will happen to the poor camel?"

Practically all of the U.S. oil men interviewed felt that any agreement for worldwide control of crude supply wouldn't work—primarily because it would be illegal.

There was a strong undercurrent of feeling that such an agreement would be valuable, if it weren't impossible to have one. But at the same time, 16 of 25 top oil men contacted were opposed to such controls, six had no opinion, and only three favored that type of regulation.

For example, some had this to say:

- "I don't see how you could work out an agreement with all the politics tied up in it."
- "I don't think this will happen. It's tampering with the law of supply and demand, and that never works out well."
- "Cartels got the oil industry in trouble before. They better sit tight and take a long look before doing anything."
- "An agreement would be illegal for an American company. If legal,

though, it would have a lot of advantages."

Others, favoring such controls, said:

- "Under present circumstances, there is what you might call international 'stealing' of oil, because of the lack of any control similar to U.S. proration regulations. In the U.S. there are restraints that tend to prevent overproduction. Overseas, however, the threat of expropriation and nationalization causes oil companies to take out as much oil as they can. Some sort of international proration obviously would be helpful, but I don't know what this might be."
- "There should be an agreement. It's inevitable. How and when are the questions. We have to take care of the little companies and the U.S."

Continental Oil Co.'s L. F. McCollum came out strongly for a continuance of "healthy price competition, but with all parties taking proper cognizance of short- and long-run costs, sound conservation principles, and demand and supply conditions."

In a "general lecture" at the congress, McCollum said the other alternatives would lead to a series of destructive price wars, the creation of rigid international cartels, or agreements among nations to control oil output.

The conditions of an abundant supply, he noted, create a situation in which economically wasteful production and marketing practices can develop.

"This is particularly true in view of the appearance on the world marketing scene of many newcomers, whose marketing policies are somewhat unpredictable, and not necessarily dictated by long-range economic considerations."

Governments of producing countries should recognize that their oil is of little value without access to large markets in consuming countries, McCollum warned.

Those markets, he said, will not be available unless oil is supplied to them in proper quantities, at the proper time, and at proper cost.

Governments of consuming countries, he charged, should recognize that their nationals have no inherent "right" to the oil in the area from which they draw their supplies.

Their positions, he explained, are essentially those of large buyers.

Both producing and consuming nations should recognize the contribution which the commercial oil industry makes to the successful development and distribution of oil resources, McCollum said.

Men from Many Countries

CONGRESS CHAIRMAN: E. V. Murphree, president of Esso Research & Engineering, directed planning.

JAPAN: Takeji Umezawa, Iino Shipbuilding & Engineering, and Atsumi Yamazaki, Iino Steamship, both of Tokyo.

SAUDI ARABIA: Soliman Al-Hegelan, government petroleum dept., Abdullah Tariki, director general of petroleum affairs, and Tariki's son, Sakhr, toured the Coliseum.

MEXICO: A. Garcia Rojas, a representative of Petroleos Mexicanos.

ENGLAND: R. J. Holly, a former Texan, now with Kuwait Oil Co., London.

Attend 5th World Petroleum Congress

PHILIPPINES: L. Santos-Ynigo, chief geologist; B. M. Gozon, director and chairman of delegation; and P. Bautista, chief of the petroleum division, of Philippines Bureau of Mines.

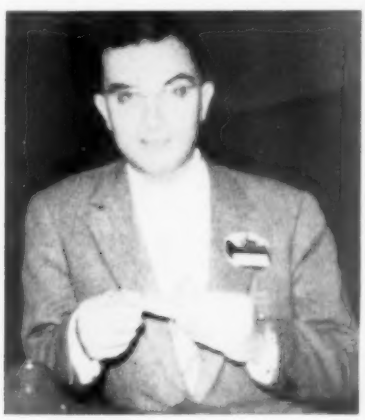
FRANCE: G. Flambard, Socony Mobil, and R. Grange, Cie. Francaise de Raffinage, both from Paris were early arrivals over the weekend at the Coliseum.

ITALY: Fred Chiolia, Ugo Pini-Prato, and Angele Gavassino, all of Ansaldo S.P.A., Genoa, leave the registration desk.

YUGOSLAVIA: Njegus Bogdan, director general, and Lucic Gojko, chief of petroleum division, State Geological Institute.

GERMANY: W. Von Creytz, Phoenix Rheinrohr Corp., of Duesseldorf.

FRANCE: T. Reis, Petrole-Chimie, Paris, studies technical papers.



MOROCCO: A. Hamou, of the Bureau of Mines, looks over theater tickets.

New Import Rule Will Bring Cutbacks

New import allocations to be handed out this weekend based on modifications in the rules will mean slight reductions for most companies in the areas east of the Rockies.

The reduced allocations for the last six months of the year will be based on three primary factors.

One is the Bureau of Mines' forecast of total U.S. demand for the July-December period.

Reportedly, the government agency's revised forecast of second-half demand shows a slight decline in the areas east of the Rockies, Districts I-IV, and a small increase for the West Coast, compared with the first six months.

At the start of the year, the Bureau's forecast was that total U.S. demand in each half would run about the same—averaging 9.6-million b/d.

The presidential proclamation on crude and unfinished oils limits imports of those raw materials into Districts I-IV to 9% of total demand as estimated by the bureau.

The major rule changes affecting the new allocations are expected to be a change in the refinery-run formula and a reduction in the "guarantee" factor to old importers.

Though Imports Administrator Carson was accepting company suggestions this week on proposed changes, he has already said that the sliding-scale percentage formula on runs would be revised downward, regardless of company comments.

In the first period, which ends June 30, quotas of refiners east of the Rockies were computed at the rate of 12% for those running 10,000 b/d or less, working down to a ratio of 4% for runs over 300,000 b/d.

On the West Coast, the percentages will be raised slightly.

The "historical" factor, which has allowed the long-time importers to receive 80% of their former voluntary-plan allocations, will be reduced to 75%. And most observers predict that the "protective" factor will be dropped by Jan. 1.

The 80% factor will be retained on the West Coast for the next period.

No upward revision in residual fuel oil imports is planned in the allocations to be set initially for the last half.

But under the presidential directive, the Interior Secretary is empowered to revise residual imports "at any time" as may be necessary.

Trades of import allocations for domestic crude are piling high.

The Oil Import Administration, which last month announced 30 such exchange agreements (PW—May8'59, p14), has just made known a new wave of swap deals.

Early this week, 21 more trades—with Socony Mobil Oil Co. involved in 11 of them—were added to the growing swap list.

Socony will get about 11,200 b/d of foreign crude allocations as a result of the new swaps.

It is taking allocations of 3,390 b/d of Venezuelan crude from Kerr-McGee Oil Industries, Inc.; 1,740 b/d of Venezuelan crude from Ingram Oil & Refining Co.; 1,330 b/d of Venezuelan crude from Delhi-Taylor Oil Corp. and Mayfair Minerals, Inc.; 1,550 b/d of Venezuelan crude from Premier Oil Refining Co. of Texas; and 325 b/d of South Penn Oil Co.'s foreign crude.

Socony will also get allocations of 633 b/d of Venezuelan crude from Quaker State Oil Refining Corp.; 670 b/d from Husky Hi-Power, Inc.; 170 b/d from Westland Oil Co.; 300 b/d from Elk Refining Co.; 90 b/d from Three Rivers Refinery; and 190 b/d from Texas Calgary, Inc.

Some of the other new swaps involve Atlantic Refining Co.—which is getting allocations of 2,070 b/d of Venezuelan crude from Bell Oil & Gas Co.; a 29,120-bbl. cargo of Venezuelan crude from Allby Asphalt & Refining Co.; and 470 b/d of Venezuelan crude from Illinois Farm Supply.

Also, Gulf Oil Corp. is giving Sonneborn Sons, Inc., southwest Pennsylvania grade crude for Sonneborn's entire import quota.

Exchange ratios for the new swaps vary a good deal.

Sonneborn, for instance, is giving 1 bbl. of foreign crude for every 0.72 bbl. of domestic crude in its deal with Gulf.

At the opposite end of the line, Standard Oil Co. of California is giving 1 bbl. of foreign crude for every 1.556 bbl. of Wilshire Oil Co. of California's domestic crude.

Oil Men Seek Greater Efficiency

More than 200 exhibits displaying the latest advances in oil exploration, production, transportation, and refining at the Fifth World Petroleum Congress were geared to the nearly 300 technical papers presented.

Foreign exhibitors included equipment firms from Germany, Sweden, Holland, France, Italy, Great Britain, and Canada.

Some exhibits amounted to progress reports on major projects. One was a model of the world's largest pile-supported drilling island, now nearing completion in the Gulf of Paria, off the coast of Trinidad. The structure, supported by hollow concrete cylinders in 68 ft. of water, is designed to accommodate 72 wells.

The largest group of technical papers presented dealt with the search for new sources of oil.

In addition to 60 papers dealing directly with geology and geophysics, another three papers, in the section devoted to applications of atomic energy, discussed logging tools and their value to the search for oil.

The discussions on drilling and production reflected the continuing concern over rising costs and the search for methods to improve efficiency.

New drilling methods and tools—including rather detailed descriptions of "explosion drilling" by the Russians (page 23) provoked much comment from drilling and production men from all nations.

The growing importance of secondary recovery techniques was also a major topic of discussion in the drilling and production section.

Two Pan American Petroleum Corp. officials—George Roberts, Jr., and Scott W. Walker—reported that there may be a 100% increase in the amount of oil recovered from known reservoirs by greater use of fluid injection methods.

Processing discussions at the Congress presented a contrast. The majority of the technical reports of U.S. delegates were on product quality improvements. Most papers by foreign technicians were theoretical in scope.

This is symptomatic of the state of development of the oil industry in the various countries represented. Starting with purely academic studies, a country tends to become increasingly interested in a great variety of refinery processes and process theories as its oil economy becomes more of a reality, or as it changes—in Germany, for example—from a coal economy to an oil economy.

When finally it has reached a high degree of development, it can afford to concentrate upon one specific as-

pect of the art of refining, suitable to specific market conditions, as in the U.S.

Little was offered in the field of lubricants by the U.S. technicians, while quite an interest was displayed in that field by representatives from Canada, France, and Great Britain.

Catalysts and additives for all petroleum products had a predominant place in the presentations, about equally divided between American and foreign representatives.

In the field of current research of interest to all oil men, two Jersey Standard research men recommended that the industry use "information researchers" to keep abreast of the vast flood of technical and scientific literature.

Their idea would be to designate scientists and engineers of recognized ability who would work with the written word rather than in the laboratory.

Their responsibility, according to G. H. Cloud, of Jersey Production Research Co., and W. T. Know, of Esso Research & Engineering Co., would be to see that information from the more than 2-million technical and scientific papers published each year would flow to those who can use it.

Of more long-range research projects, some scientists reported that a more "realistic" picture is emerging on the competitive position of atomic energy.

Atomic energy will become an electric-power fuel competitor of oil in high-cost areas of the U.S. starting about 1968, according to Dr. Robert E. Wilson, retired chairman of Standard Oil Co. (Ind.)

The exact timing, Wilson said, will depend partly on the rate of increase in the cost of conventional fuels and partly on the rate of reduction in the cost of reactors and atomic fuel elements.

Atomic power, he predicted, will become economic in England and one or two other European countries somewhat sooner than in the U.S.

Radiation will become a more important tool in processing, according to Clark Goodman, director of research of Schlumberger Well Surveying Corp. Nuclear reactors, he predicted, will be used "within a decade" in the manufacture of petrochemicals.

On the other hand, Dr. E. V. Murphree, president of Esso Research & Engineering Co. and chairman of the Congress, cautioned that it may be more than ten years before chemical reactions brought on by radiation can be carried on economically.

The new attention being given to "optimization" of company operations through the use of electronic computers and advanced mathematics was reflected at the Congress.

A paper by Tidewater Oil Co. shows how it is "possible and feasible" to construct a mathematical model of an entire integrated oil company.

This model provides the degree of accuracy needed by top management. It shows the most profitable company-wide operating plan, and answers many questions related to exceptions from the plan. Higher accuracy is required in the model at lower management levels.

Also underscored at the congress was the application of the techniques of the social sciences to the study of marketing. The purpose is to provide three essential services to management: (1) marketing information, (2) solutions to marketing problems, and (3) marketing innovation, according to John M. Boatwright, chief economist, and Blaine Cooke, director of commercial research, of Standard Oil Co. (Ind.).

The challenge facing both marketing men and market research is the vital need for "creative adaptation to the new reality of the market," they said.

While the technical discussions filled the program of the congress, oil men were equally interested in talking of current developments, which will have lasting impacts on world petroleum operations.

Of major interest to many delegates is the rise of new oil-producing areas, particularly on the African continent.

The relatively close location of many of the new discoveries to Europe could create some major changes in the supply channels for the European market.

The discovery of oil in the Sahara has changed the attitude of French oil men to an unbelievable extent.

"Now we feel that we really 'belong,' that we are ready to build our French industry upon something concrete," said Roger Buttin, general manager of three French petroleum companies in Africa, and president of French Assn. of Petroleum Technicians.

European Oil Equipment Is Rising

European manufacturers of petroleum equipment expect within a very few years to be able to supply 95% of Europe's needs for refinery equipment and 85% of its needs for drilling equipment.

Manufacturers of seven countries have formed a trade association to help achieve that goal. And the European manufacturers think they will be even more competitive with U.S. firms for exports to Africa, the Middle East, the Far East, and even South America, Jean Pierre LeGall, secretary-general of the Federation Europeenne des Constructeurs d'Equipment Petrolier, told PETROLEUM WEEK this week.

FECEP, which was organized on a very modest basis in 1953, now has over 1,500 members, LeGall says. There is no comparable organization in the U.S.: it resembles a cross between the American Petroleum Institute and the Petroleum Equipment Suppliers' Assn., with manufacturers of refinery equipment added.

European oil men are joining the equipment manufacturers in exchanging ideas. Of the 20 technical papers at its first congress, held in Liege, Belgium, in 1956, 19 were presented by manufacturers and one by a refiner. At its third congress, to be held later this month in Paris, ten papers will be presented by oil men and ten by manufacturers.

At present, LeGall says, the federation "is essentially an association for the exchange of ideas between oil men and equipment builders, by which we feel both groups will profit.

"For example, at our June Congress in Paris, we expect, besides the discussion of technical papers, to review what we have learned here in New York, for the benefit of our members who could not afford to attend the World Petroleum Congress.

"Our members in the manufacturing industry are much less specialized than you are in America. They build petroleum equipment only as a portion of their output: heretofore the market, for us, has not been large enough to specialize. But it is growing."

There are, evidently, many differences between European and American construction practices in the petroleum industry.

One difference, which was most frequently mentioned by French delegates, is the difference in the quality of steel required for every sort of petroleum operation.

"American standards are too rigorous, in certain respects, in their specifications of open hearth steel," said Dr. R. Sigwald, manager of the Compagnie Francaise de Raffinage. "On the other hand, we had to develop for our pipelines, which transport gases of very high sulfur content (18%), certain steels of which there are no counterparts in America."

Field Gas Prices Need to Rise

Gas producers may be pricing themselves out of business, with field prices too low to generate sufficient capital for future exploration, according to John G. Winger, petroleum economist of the Chase Manhattan Bank. He feels that consumers are buying gas at an uneconomically low price.

With the great bulk of expansion capital today derived from internal operations, gas producers will have to raise prices to acquire sufficient funds to meet the demand for gas, Winger told the API Division of Finance & Accounting at Los Angeles last week.

In fact, unless more capital is raised for exploratory investment, there may be a shortage of gas some day, Winger said.

Most of the consumer's gas dollar does not return to the gas producer. Instead, it goes to the gas distributors —the public utilities—which are not concerned with the search for new gas reserves.

Oil companies are spending more of their exploration dollars abroad, he noted, but, unlike crude, the discovery of gas abroad does not increase domestic supply.

At present, many producers subsidize gas exploration with profits from oil, Winger said.

The common practice of many companies, he pointed out, is to charge exploratory costs against oil production. Most companies, therefore, don't know how much it costs to find gas.

Furthermore, producers are in the habit of "shelving the oil," while selling all the gas they can. Winger says that this practice of putting the oil on the shelf is the main reason why crude allowables are down. He advised selling the oil and putting the gas on the shelf.

"Gas must stand on its own feet; otherwise no one will search for it," Winger warned.

He suggested that a proportionate share of exploration costs should be shifted from oil to gas.

Furthermore, he said, regulations on gas should be removed so that the price of gas can find its natural level, based on supply and demand. At present, Winger said, gas and oil are not competing on an equal basis because oil prices depend on supply and demand, whereas gas prices are controlled by utility-type regulation.

What's New / IN THE INDUSTRY

Signal Oil & Gas Co. plans to acquire Eastern States Petroleum & Chemical Corp. through an exchange of stock. Subject to final agreements, Signal, which last year acquired Hancock Oil, will get a 60,000 b/d refinery and a petrochemical plant, both in Houston, and Eastern States' interest in the Rancho Pipeline system from West Texas to Houston.

•

Texas American Asphalt Co.'s hearing for a permanent injunction against mandatory import controls is taking on added significance. When the case is heard June 24 before U.S. District Judge Joe Ingraham, at Houston, several associations, including the Independent Petroleum Assn. of America, plan to file briefs as friends of the court. While the case concerns only Texas American's lack of an allocation for asphalt crude, the significance is that the company's plea is based on its allegation that there is no crude available in the U.S. from which it can make asphalt to meet its specifications.

•

A cut of 15,000 b/d in Oklahoma's June allowable, to 545,000 b/d, was made by reducing unallocated pools. The cutback for those areas amounts to 3 b/d per well, to 17 b/d. The Corporation Commission ruled that operators will not be permitted to make up underproduction in June, a factor that has contributed to production higher than allowable.

•

Western Canadian crude is making a comeback at Puget Sound refineries. General Petroleum Corp., Shell Oil Co., and Texaco Inc. plants in the area will take an average of 55,400 b/d of Alberta crude this month, compared with about 29,000 b/d in May. Exemption from U.S. import restrictions of Canadian crude, needed for its high yield of jet fuel and avgas, made the increase possible.

•

Atlantic Refining Co. may soon attain crude self-sufficiency because of its recent Venezuelan discoveries, according to Henderson Supplee, Jr., president. Holdings in Lake Maracaibo "are mainly responsible for the more than seven-fold increase" in the company's foreign crude reserves during the past four years, he said.

•

U.S. coking capacity will increase 75% in the next seven years, according to Valentine Mekler and Maurice E. Brooks, of The Lummus Co. The increase would bring daily coke production to 11,000 tons, they told last week's meeting of API's Division of Refining.

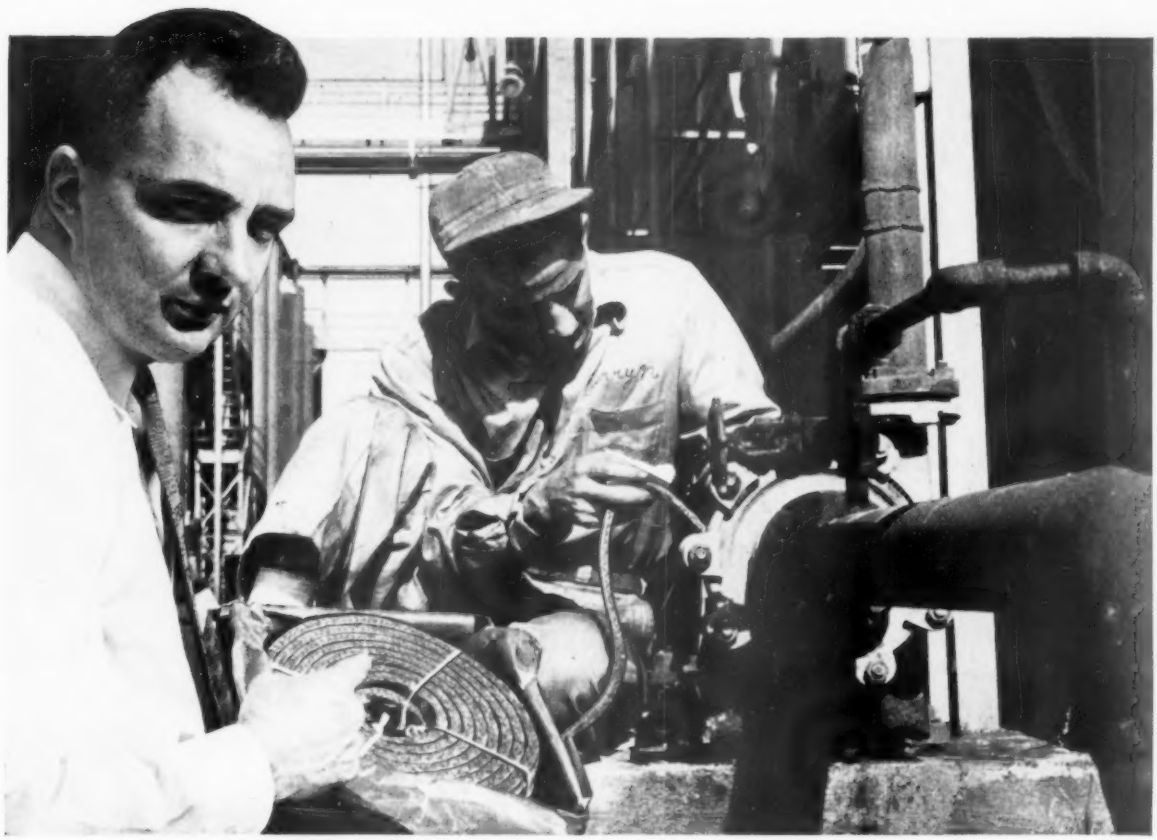
•

Major companies have fallen behind as large tanker owners because they regard tanker fleets as "marginal" enterprises. That's the opinion of Robert S. Nielsen, as published this week in "Oil Tanker Economics." The trend toward ownership of fewer tankers by the larger companies is likely to continue, he said, because they feel they can charter ships advantageously in a market made up of many independent ship owners.

•

American Independent Oil Co. will move its headquarters to New York. The transfer from San Francisco, to be made Aug. 1, will affect all departments. Ralph K. Davies, chairman, will remain in San Francisco.

SOLVENT PACKINGS



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Looking Ahead in Washington

McGraw-Hill
Washington
Bureau
June 5, 1959

The government now hopes to resume hearing comments on oil import rules before changes are adopted. The Administrative Procedures Act requires that, whenever possible, proposed changes in government programs be published in the Federal Register, and that sufficient time be given for interested parties to reply.

Recent rulings on oil imports—the adoption of the mandatory control program, for example—were made without benefit of industry advice and comment. Time was all-important to government policy-makers, and the notification requirement in the Administrative Procedures Act was waived on the ground that national security required quick action. So, although only seven days were allowed this week for comment on the latest rule changes, the government is trying to get back on stream.

•

Congress will order a design study for a nuclear tanker reactor. The Joint Committee on Atomic Energy is putting the final touches on a bill that would authorize $1-million for such a study. The Maritime Administration wanted to go ahead with construction of an atom tanker, but this was opposed by Maritime's parent agency, the Commerce Dept. The congressional decision for the design study means that proponents of the nuclear tanker will be in a stronger position next year in their efforts to start construction.

•

Ranking Democratic congressmen and the Interior Dept. are at odds over leasing changes. Congress's two key figures in oil and gas leasing —Sen. Clinton Anderson (D., N. M.) and Rep. Wayne Aspinall (D., Colo.) —have joined in sponsoring legislation to revamp the Mineral Leasing Act. The Anderson-Aspinall bills would, for example, provide an initial ten-year term for oil and gas leases in place of the present five-year term. But the Interior Dept. wants to change this by adding a requirement that leases not be extended unless production could be proved. Interior also wants the increased rental fees that President Eisenhower recommended in his state of the union message, but Anderson and Aspinall disregarded the request in their bills.

Aspinall, chairman of the House Interior Committee, is expected to guide his bill through that group this year, but the Senate committee is not expected to act until after holding hearings later this year.

•

Democrats in Congress are also squabbling with the Administration on the application of minimum wage legislation to service station employees. Sen. John Kennedy (D., Mass.) is renewing his drive to extend the Fair Labor Standards Act to retail operations. A Kennedy bill would increase the minimum wage from $1 to $1.25 per hour, and would also apply the minimum to employees of service stations with commercial customer receipts of $50,000 or more, or with total receipts of $500,000 annually.

Labor Secretary James Mitchell is against the proposal. Says Mitchell: "This bill would require [certain] service stations to increase wages by two-thirds to meet the minimum wage requirement." Outlook for the Kennedy bill: probably not this year.

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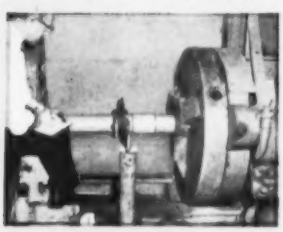

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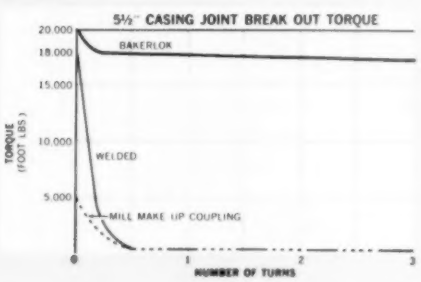

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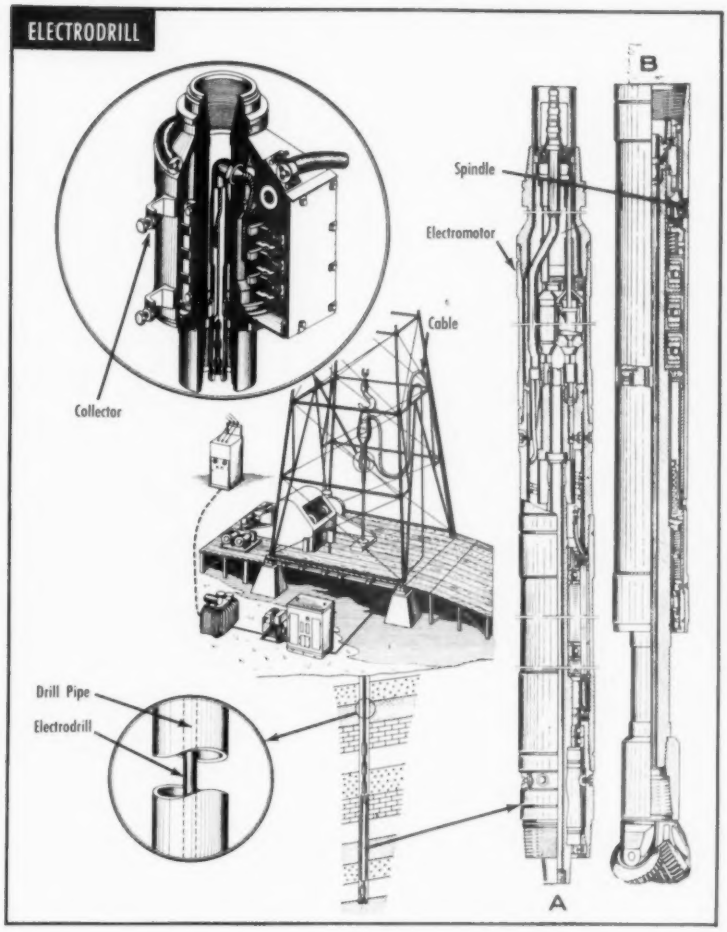

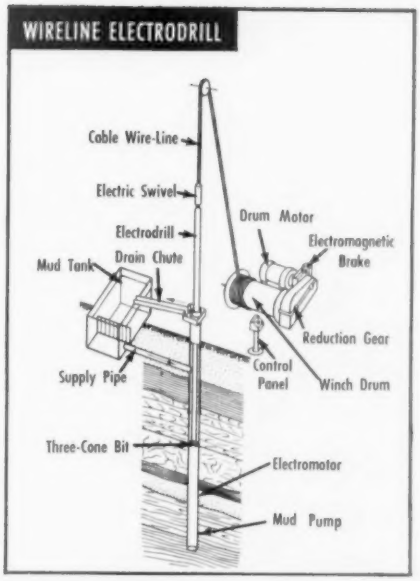

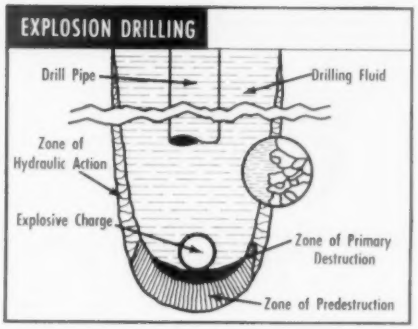

How Russians 'Drill' with Explosives

The Russians report they have developed new electrodrills, better turbodrills, and a "drilling" process involving use of explosives.

Some reports already have reached this country of the new methods and equipment adopted, or being tested, in the Soviet Union (PW—Feb.20, '59,p22).

Perhaps the broadest single review of such developments to date, however, was presented at this week's World Petroleum Congress in New York.

The paper was prepared by a team of eight top Soviet scientists—R. A. Ioannesyan; M. T. Gusman; A. A. Minin; G. I. Bulakh; E. I. Tagiev; N. I. Titkov; F. A. Trebin; and A. P. Ostrovsky. Though they, like all other Russians scheduled to attend the congress, were not present, the paper was read to the meeting.

The Soviet explosion drilling method consists of making hole by blasting special explosive charges in a liquid column.

The charges are run at a predetermined rate into the drill pipe by the flow of drilling fluid. These charges explode at the same, controlled rate on bottom.

According to the Russians, the "underwater" explosions create a "sphere of destruction" in the rock adjacent to the bottom of the hole (drawing, lower right).

The hole is formed as a result of the combined action of the repetitive underwater explosions.

The destruction of the rock within the zones of crushing and predestruction is the result of the compressive and tensile forces originating in the rock due to action of the compressed gas energy on the stock.

Fracturing in the zone of hydraulic action results mainly from the recurrent alternating strains due to shock waves in the fluid caused by the explosions. The repeated "waves" in the fluid result in separating relatively large fragments from the rock.

Drilling speed is principally related to the shattering action of the charge in the zone of crushing, while the diameter of the hole depends primarily on the rock breakdown in the zone of hydraulic action.

The Russians say the explosion method has been proved in field tests at depths to 9,000 ft.

The maximum continuous well interval drilled by explosions in hard formations is about 950 ft., the Russians report. The maximum rate of penetration achieved by explosions in hard limestones and dolomites was 50 ft. per hour, with the average rate being from 10 ft. to 16 ft. per hour. As might be expected, the penetration rate depends on the depth of the well

and the characteristics of the formation drilled.

The diameter of the hole made by the explosions does not depend materially on the diameter of the pipe used, the report adds. This makes it possible to isolate zones causing difficulties by use of intermediate casing, and to obtain an open hole of required diameter.

Thus, the Russians continue, favorable conditions may be provided for penetration of deep intervals using conventional muds, water, and even air.

The Soviets apparently are making increasing use of electrodrills for drilling deep and directional holes.

The report makes it clear that the Russians have made important advances in two types of electrodrills developed so far. One type uses drill pipe; the other is a wireline tool (drawings).

A chart showing results of electrodrilling for Devonian sediments in the hard formations of the Tuimaza oil area of the Bashkir region underscores the progress made in electrodrilling between 1951 and 1957. Penetration rate, for example, increased from 14 ft. per hour in 1951 to more than 40 ft. per hour in 1957. Corresponding improvements were noted for trip rate, footage, and costs.

The electrodrill in which the electric motor is part of the drill stem permits use of weighted drilling fluids, air or gas, and reverse circulation.

Electric power is supplied to the electrodrill with the aid of cable through a collector. Separate sections of the cable are mounted in the drill pipe stands. Each cable section has a male contact at one end and a female contact at the other which engage when the drill joints are made up.

The process of electrodrilling is automatic and accurately controlled, say the Russians. They note, however, that the problem of power supply through small-size drill pipes (3½ in. and 4½ in.) remains to be solved to meet the needs of slim-hole drilling.

The electrodrill consists of two main parts: (1) an oil-filled electric motor; and (2) an oil-filled spindle.

The bit is connected to the shaft of the spindle. The housings of the electric motor (A on diagram) and the spindle (B) are connected by means of cone threads, their shafts being connected through a toothed coupling. The electrodrill motor is asynchronous, three-phase, alternating current with a shorted rotor.

The latest reported model is a 280-kw. unit designed to rotate the bit at 920 rpm.

The wireline electrodrill permits greater portability and reduces round-trip time, the Russians report.

Drilling-fluid circulation is effected by means of centrifugal pump mounted on the shaft of the electrodrill (diagram, page 23). Cuttings are gathered inside the bottomhole unit and periodically lifted to the surface. According to the Russians, this electrodrill can be used regardless of the fluid level in the hole.

Experimental models of such electrodrills, with 5¾-in. threecone bits and 50-kw. electromotors, were tested at depths up to 6,500 ft. at bit weights ranging from 1,200 lb. to 1,600 lb.

Penetration rate of these electrodrills was 2 to 2½ times greater than early-type reversible electrodrills, which averaged 5½ ft. per hour to 11½ ft. per hour.

The Russians say the wireline electrodrill can be used for deep drilling, for drilling low-pressure zones, for drilling out cement, for deepening the hole, and for other remedial work.

The Russians also report development of new slim-hole turbodrills.

Turbodrills with 5⅜-in. and 4⅜-in. bits have been developed. The Russians also claim that "the problem of the life of rock-bit bearings has been radically solved" by a new design in which the bearings are not subjected to weight on the bit.

Plastic rotors and armatures also are being used in the manufacture of turbodrills. These plastic parts are cheaper and also more resistant to corrosion.

The Russians also report using diamond bits with turbodrills.

Tests also are continuing on a method of making hole by means of electric discharges through a liquid medium.

This method is similar in results to the explosion method, since hole is made by hydraulic shock effects created by discharge of electricity between electrodes in a fluid.

A tangential drill used in this operation consists of four positive electrodes mounted in the drill housing, whose lower part has cuts forming four negative electrodes. There are air-gap balls at the upper ends of the electrodes.

A discharge ball placed above the air-gap balls rotates around the drill axis, approaching the lower discharge balls in turn, and successively forming spark gaps with each of them.

Lab tests of the drill show that spudding of a hole begins with formation of an annular groove. Further deepening of the groove leads to "destruction" of the core.

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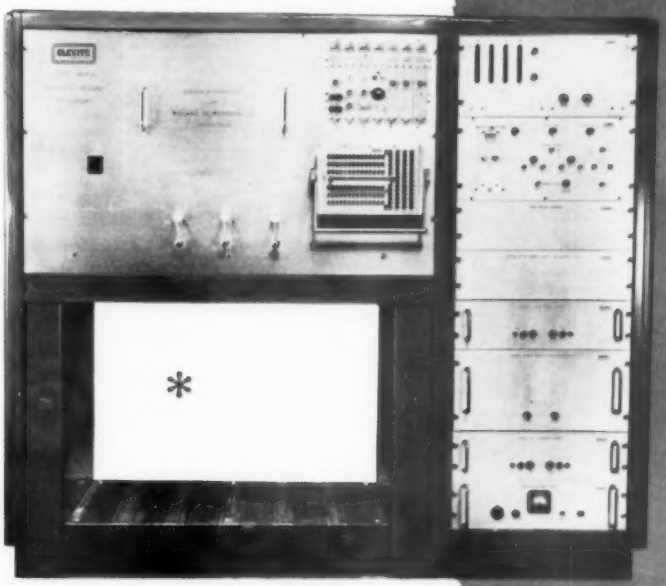

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How Gulf Plugs Water-Bearing Zones

The chemical key to Gulf Oil Corp.'s success in sealing off water-bearing formations—one of the biggest problems in air drilling—has been identified as silicon tetrafluoride.

Several months ago, Gulf revealed that it had found a way to halt underground water invasion successfully by using a gas (PW—Feb.13'59,p16). But it did not divulge what gas was used, or the exact way the operation was conducted. Now Gulf has revealed the details.

In Gulf's method, the silicon tetrafluoride (a gas) is injected into the water-bearing formation, where it forms a precipitate to plug the water flow.

Here's how Gulf works its single-phase water-shutoff technique:

(1) Packers are used to isolate the water-bearing zone.

(2) Oil is pumped into the hole, followed by a dry, inert gas, such as nitrogen. This is followed by the silicon tetrafluoride, and another slug of nitrogen.

(3) A rubber plug is inserted, and pressure is built up by pumping water in behind the plug.

Oil meets the water first and sweeps it from the hole, to prevent a premature reaction with the reactant gas.

Since it is under pressure, the oil begins working its way into the formation, pushing some of the water ahead of it.

The nitrogen serves the double purpose of providing a buffer zone between the silicon tetrafluoride and any water that might mingle with the oil, and of catching any water that might be overrun by the oil due to differences in permeability of the formations.

As soon as the silicon tetrafluoride reaches the formation, it begins penetrating, pushing through the oil, and reacting with the water to form a precipitate to plug the formation pores.

The close-following charge of nitrogen prevents any water that might bypass the rubber plug from reaching the reactant gas.

As the reaction continues, pressure is built up, because less and less gas can be forced into the formation. When this pressure reaches a certain level, the reaction has been completed.

The cut-off point for the pressure is just short of that required for hydraulic fracturing. Once the formation is fractured, the relatively large crack is quite difficult to plug. Gulf says, however, that in such cases the method still has effected 85% to 90% shutoffs.

Field trials show the method to be extremely effective, almost ideal, says Gulf.

Even though the area being sealed consists of several different sands, Gulf says, for all intents and purposes a uniform plug is formed in all the sands.

And even though the gas enters the most porous sand first, as soon as it has plugged that sand, it is diverted to the next most porous formation, and so on until all are sealed.

The fully plugged zone, which is about 4 in. thick, is about 2 in. in from the wall of the hole, thus minimizing the possibility of the plug flaking off during drilling.

"Because of such characteristics as these," says Gulf, "the method has proved 99% to 100% effective in field applications in holding back water flowing at rates of 60 bbl. per hour, and sometimes higher."

Gulf says tests have established the method as being applicable to the sand-type formations that occur in many oil and gas producing areas, such as western Pennsylvania and the Mid-Continent.

Equally important, says Gulf, is that the technique is relatively inexpensive.

The necessary equipment is simple. Treating time is held to a minimum because there isn't any costly waiting time for the plug to "set." The reaction is instantaneous, and, once treatment is completed, drilling can be resumed immediately.

The method has been licensed to several servicing companies.

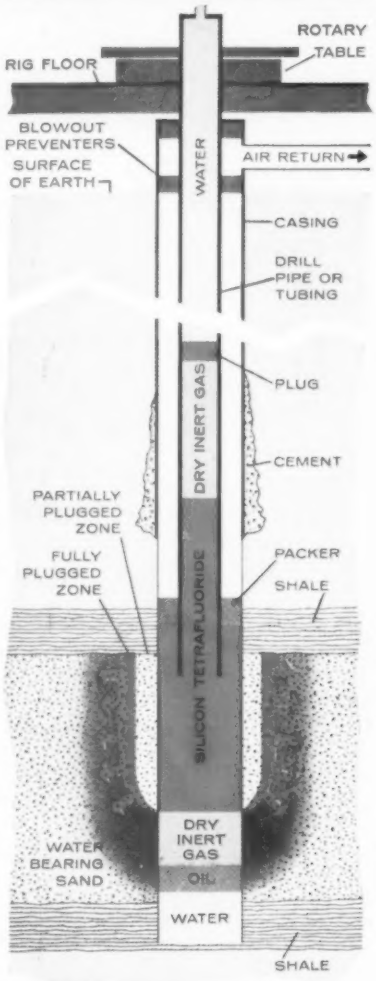
The break-through of the water-influx barrier is expected to give a boost to air drilling.

Heretofore, once water was encountered, the operator either had to switch to conventional use of mud, or, if the water flow was light enough (less than 20 to 30 bbl. per hour), to use the mist or foam technique.

In either case, the water problem has definitely restricted the use of air drilling in certain areas, such as the Gulf Coast.

Now, says Gulf, the operator has the choice of switching to mud if he encounters water near the completion stage of the test (a common practice), or, if the water is found early in the test, he can seal it off and go on drilling with air.

It's Done With Silicon Tetrafluoride



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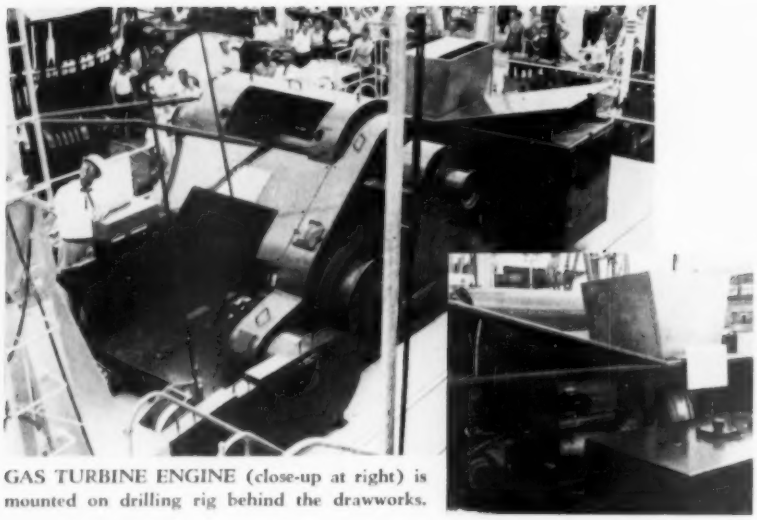

GAS TURBINE ENGINE (close-up at right) is mounted on drilling rig behind the drawworks.

Gas Turbine Powers Drilling Rig

A gas turbine engine of the same type used to power turboprop airplanes has made an experimental debut in the drilling industry.

A 500-hp. production model shown recently in Tulsa was being used to power a trailer-mounted 5,500-ft. drilling rig made by Continental-Emsco Co. The same turbine has been used for various applications, but never before on a drilling unit. The turbine is built by Solar Aircraft Co., San Diego, Calif.

The engine's biggest drawback is its cost—around $50,000. But a Solar representative says this figure could be reduced substantially if the demand becomes great enough to warrant mass production.

Offsetting the high cost are several advantages being claimed for the "Jupiter" turbine, among which are smaller size and weight.

With a weight of 2,859 lb. and a length of only 98 in., the turbine weighs far less and takes less space than the power source it replaces.

Besides helping to minimize rig-up and tear-down time, this big cut in the weight-size factor should go far in allowing highway travel for trailer-mounted units.

The turbine is air-cooled, an important factor in both desert and Arctic areas.

For desert drilling, elimination of the radiator lessens water problems and reduces maintenance. For Arctic drilling, it means an end to radiator freeze-ups and preventive steps.

The turbine already has operated at temperatures from minus 65F to 130F. And it goes from a cold start to peak operational efficiency in 35 seconds. No warm-up is needed.

The availability of exhaust heat for cold-weather work is another advantage claimed for the engine.

At full load, it discharges 5-million Btu. per hour. Through the installation of simple heat exchangers, this heat could be diverted to thaw out mud lines, defrost valves and equipment, and heat crew quarters and rig floors.

Also, the engine will burn almost any kind of fuel—natural gas, diesel oil, jet fuel, kerosine, or gasoline. It can be converted from gaseous to liquid fuel in less than two hours.

No torque converter is needed.

There is little vibration on the rig floor, thus reducing maintenance of the nut-tightening variety.

There is some question whether the turbine can compete with the Diesel for over-all economy.

It is a heavy burner of fuel, regardless of what type is used.

Continental-Emsco, on whose rig the turbine was mounted, isn't sufficiently satisfied with turbine costs to start pushing it for sales right now. But company officials think the potential is there, and interest shown in Tulsa tends to bear them out.

"We brought this setup to the International Petroleum Exposition primarily as an attention-getter," says one company spokesman. "But from the comments we've been receiving, it may not be too long before you see the turbine out in the field."

What's Ahead for Exploration?

Of all the new exploration concepts coming in the next decade or two, the greatest impact probably will be made by hydrodynamics—the science of forces or pressure of underground fluids—predicts A. I. Levorsen, consulting geologist and former AAPG president.

Levorsen, speaking this week before the Fifth World Petroluem Congress in New York City, said geologists, especially, "are beginning to apply fluid phenomena to many problems in exploration."

Hydrodynamic maps, he added, are becoming as important as structual maps, paleo maps, facies maps, and isopach maps in presenting data on which to base predictions of oil and gas occurrences.

Fluid pressure changes in a reservoir, said Levorsen:

(1) Determine in large part the rate and direction of fluid flow.

(2) Indicate in large part the capacity of a specific trap, whether structural, stratigraphic, or combination, to hold petroleum fluids in a water environment.

(3) Enable one to trace the continuity of the reservoir rock.

(4) Explain anomalous production situations, such as the fact that similar traps are barren at one location and productive at another.

Another area requiring further study and effort, he said, is why basic geological factors and events contribute, or fail to contribute, to petroleum accumulation.

A wide variety of maps, he said, including structure maps, isopach, maps, facies maps, paleo maps, fluid pressure maps, potentiometric maps, maps showing chemical change, and those showing the relation of petroleum to each of these phenomena, will have to be prepared for each and every formation in the geological column.

They will have to be studied and analyzed to locate the combination of events that offers the best chance for trapping a pool of petroleum.

"The unraveling and synthesizing of these geologic episodes by the use of maps such as these is geologic history," said Levorsen; "it requires geologists that are geologists. Depth in geological thinking is of equal importance to depth in drilling."

One major change in exploration methods in the future will undoubted-

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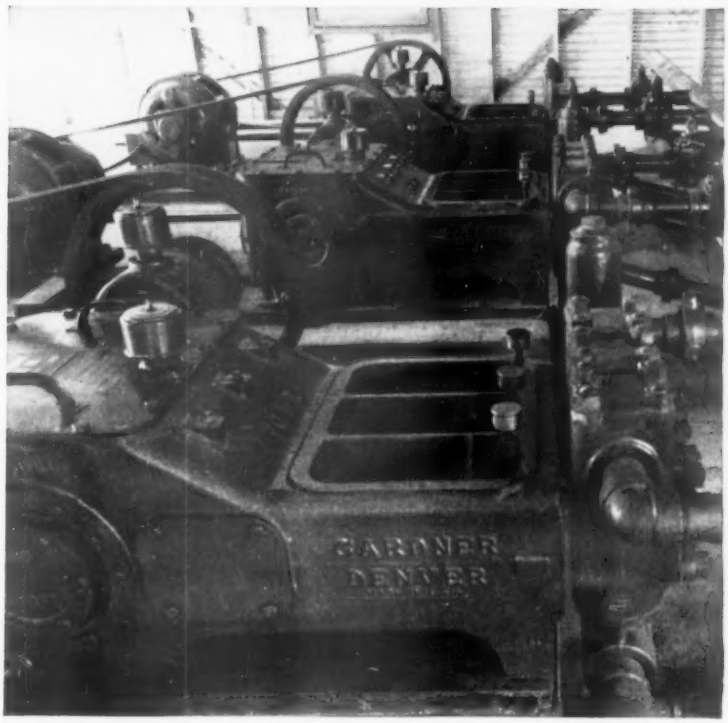

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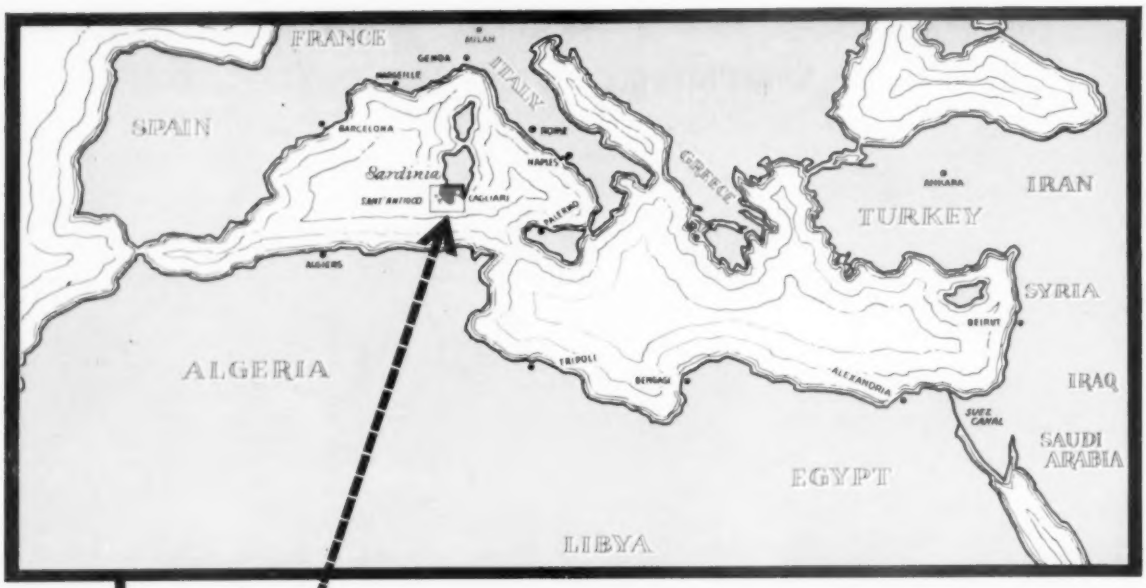

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ly be an even more intensive search for nonstructural traps, Levorsen continued.

"In fact, a continued preoccupation with purely structural traps will lead us away from as much oil as it leads us into."

As an example, Levorsen pointed to the Salt Creek area of central Wyoming. "Each of the five pools known in 1948," he said, "were located on top of closed dome fields. Many operators who used closed anticlines as the sole guide to exploration gave up the area as a profitable place to explore."

But within ten years he said, 14 more pools had been found, none of which is on a closed anticlinal trap. "Each may be ascribed to some combination of regional dip with either a stratigraphic or a permeability variation, or a combination of two or more," he said.

The future also will see a greater demand put on the interpretation of geophysical data, and integration of these data into a total picture that results in discovery, Levorsen said.

Geophysical interpretation is far from new, he noted, but "as the good-record, simple-geology areas become fewer . . . the interpretation becomes more and more difficult."

It is these difficult areas, where interpretation is tough, the records poor, and the geology complex, that hold so much promise as the hunting grounds of the future, he added.

The future trend in technology of petroleum exploration will be chiefly an extension of current methods, the geologist noted.

He said that, since "we are and have been finding petroleum under our present technology at a rate adequate to meet our over-all growing needs, we can expect that much of the current technology will find a place in the exploration pattern of the future."

Emphasis can be expected to continue, he said, toward more detail and precision and accuracy in long-distance correlations.

Once the paleontological and lithological elements have been established, he noted, there are many short cuts to correlation, which include the various logging methods.

And, as in the past, the trend "for many years in the future" appears to be continuing toward more specific and precise logs.

As for what the future attitude will be toward drilling, Levorsen foresees even more holes to be drilled chiefly for stratigraphic reasons, as more and more of the structures become exhausted. To answer the growing question of "what shall we recommend for drilling when the closed structures have been drilled," Levorsen said there is no alternative but to drill holes more and more for stratigraphic reasons.

Oil men, he said, will be forced to take a more tolerant attitude toward prospects with slight structural anomaly, and depend more and more on whatever stratigraphic evidence can be developed.

And, since this may require several wildcat tests to be drilled chiefly for stratigraphic information before the key test can be made, he said, "we can expect to see a further increase in the number of wildcats drilled per discovery."

Tied in closely with this, added Levorsen, is the pressing need for better and surer ways to evaluate minor evidences of petroleum.

"We still rely largely on individual personal judgment as to whether or not and how to test small and insignificant oil and gas shows," he said.

"We should be able to avoid testing those showings that prove noncommercial and not overlook those that do prove commercial."

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What's New / IN EXPLORATION, DRILLING, PRODUCTION

Urge More Exploration Of Atlantic Coast

Are U.S. oil companies paying too little attention to the oil and gas potential of the Atlantic continental shelf?

John E. Johnston and James Trumbull, of the U.S. Geological Survey, and Gordon P. Eaton, of Wesleyan University, told the World Petroleum Congress this week that increasing geological and geophysical information is changing the basis for judging the area's petroleum potential.

The trio added that "no nation can afford" to overlook an area that overlies 175,000 cubic miles of possibly petroleum-bearing sediments, though the first barrel of oil is yet to be produced.

They predicted that petroleum can be expected to be discovered eventually beneath the continental shelf, and perhaps along the emerged coastal plain.

"But it will not be discovered until geologists have projected paleogeographic settings into the sediments beneath the shelf from the data obtained through onshore and submarine geology, drilling, and geophysics," they said.

•

Oil knowhow has been assigned a key role in a forthcoming attempt to harness underground steam for generation of electricity in California.

Barnes Core Drilling Co., Bakersfield, has a contract to drill 12 steam wells for Thermal Power Co. in The Geysers area of north California's Sonoma and Lake Counties.

Steam will be piped from the wells to a site on Big Sulphur Creek, where Pacific Gas & Electric Co. hopes to install a 12,500-kw. generating plant.

Another steam project is being started in the Steamboat Springs area of Nevada. Magma Power Co. has rented a rig from Barnes Core Drilling Co. for a series of steam tests.

•

The New Mexico Land Commission will offer 52 tracts in 20 counties for oil and gas leasing at a special sale on June 16, almost entirely in areas with no present oil or gas production.

Counties involved are Catron, Chaves, Colfax, De Baca, Dona Ana, Grant, Guadalupe, Hidalgo, Lincoln, Luna, Otero, Roosevelt, San Miguel, Santa Fe, Sierra, Socorro, Taos, Torrance, Union, and Valencia.

•

The Texas Railroad Commission has been asked by Hamman Oil & Refining Co. to approve a combination salt water disposal and waterflood program for the Bryson (Strawn) sand, East Antelope field, Jack County.

From some 260 acres to be flooded under its Lewis Johnson et al lease, Rebecca Parker survey, Hamman expects to recover around 2.9-million bbl. of additional oil as a result of the waterflood. Original oil in place under the lease was estimated at 5,314,000 bbl.

•

Richfield Oil Corp. (L.A.) has resumed seismic and geological survey work on Graham Island, one of the Queen Charlotte group off British Columbia.

Richfield will concentrate its efforts on the west side of the island. It also will do more work on the east and north sides, where it conducted exploratory work last year (PW—Jan. 16'59,p32).

The seismic program will consist of shooting 55 mi. of line in the interior and 25 mi. of line on the roads and along the beach.

•

Stekoll Petroleum Corp. and Heritage Petroleum Corp. have jointly acquired 32 producing oil wells in Ector County, West Texas.

The purchase was made from Ike Lovelady, Midland, for an undisclosed price. The properties are on the 320-acre Moss lease, Harper field. Production is from the Grayburg-San Andres formation at 4,100 ft. Primary reserves have been estimated at 2-million bbl. of oil and 7-billion cu. ft. of gas.

•

Schlumberger Ltd. has acquired an 80% stock interest in Computer Systems, Inc., of New York City. The company manufactures analog computers and allied equipment.

More than $3-million will be invested in expanded production facilities, additional personnel, and furthering of Computer Systems' research and development program, according to a joint announcement made by Pierre Schlumberger, president of Schlumberger Ltd., and Robert K. Stern, president of Computer Systems.

•

Medallion Petroleums, Ltd., has acquired controlling interest in Eastwood Oil Co., Ltd., recently formed to conduct the oil and gas operations of General Petroleums of Canada.

A reorganization plan setting up Eastwood also provided for General's drilling business to be handled by General Petroleums Drilling Co., Ltd. Eastwood has current gross oil production of about 800 b/d.

•

A proposed merger of Buttes Gas & Oil Co. and Occidental Petroleum

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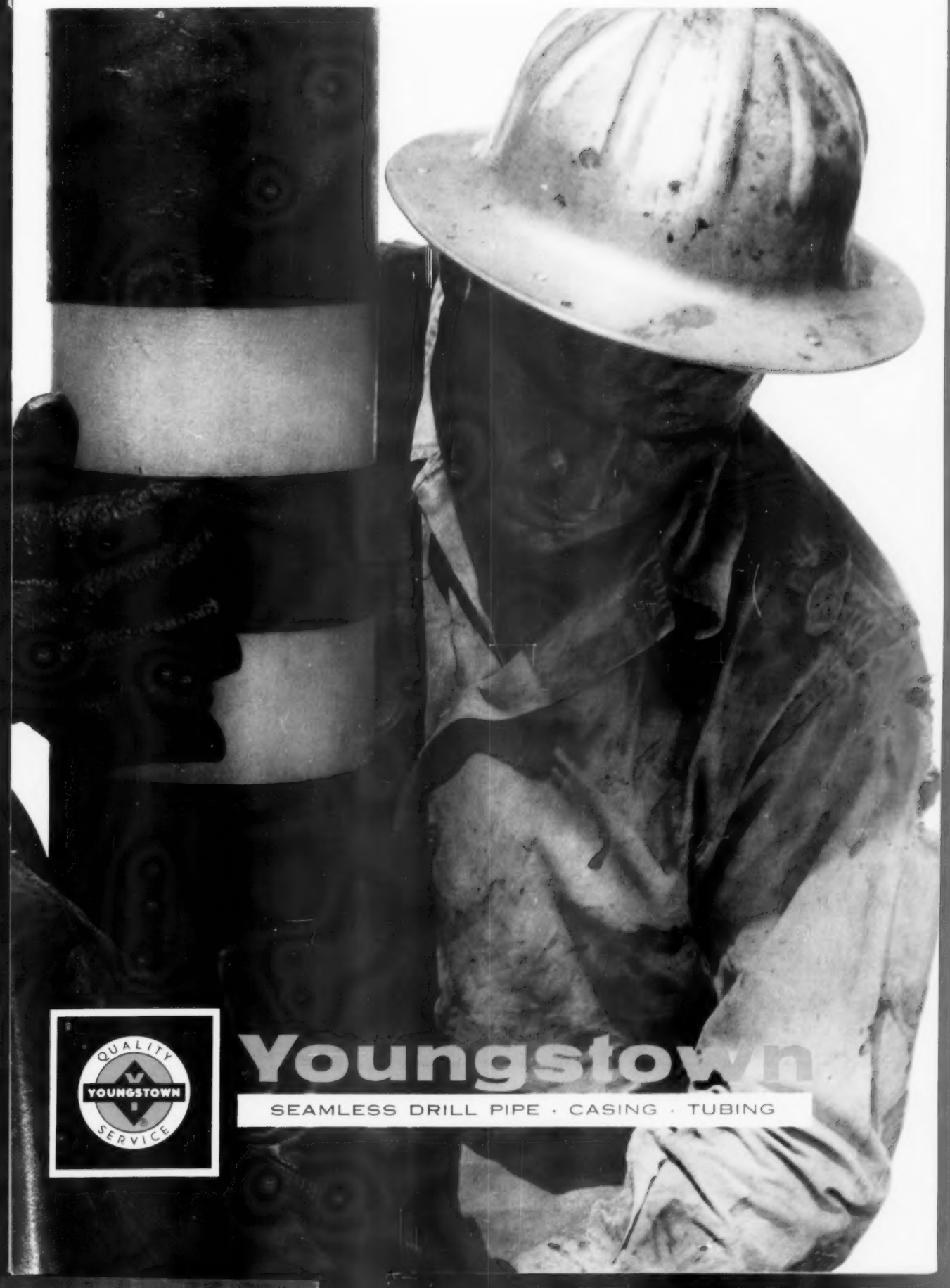
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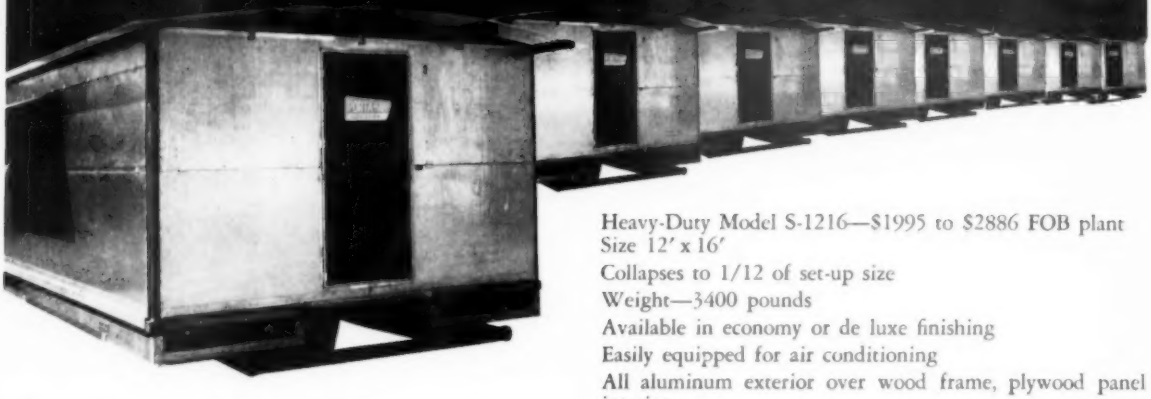

*Cost of completely equipping, crating, and dock-delivering a 50-man camp for shipment to Libya. Included were the new Model S-1216 units, all-electric kitchen, two mess halls, one 8′ x 32′ permanently-erected, steel skid-mounted bath and laundry, cots, mattresses, bedding, kitchen utensils and other required equipment.

This is another example of Porta-Kamp's ability to meet the field housing needs of operators all over the world.

Heavy-Duty Model S-1216—$1995 to $2886 FOB plant
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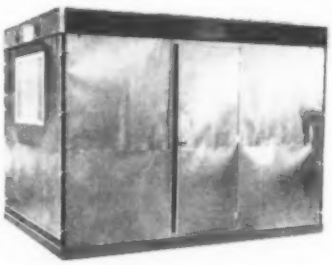
• Shipping case size—40″ x 10′ x 14″ • Weight—550 lbs.
• Also available in size 10′ x 20′, model 2D-1-C
• Costs less than tents—let us prove it! • Set up in 15 minutes.



Medium Weight Model K-10—$995 FOB plant Size 8′ x 10′
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Corp. has been rejected on that ground that it is neither "practicable or feasible."

The decision on the proposal, made last spring, was made by the boards of both companies. O. G. Green, president of Buttes, and Armand Hammer, president of Occidental, said directors agreed that the merger would not sufficiently benefit stockholders of either company.

•

Oil and gas leasing will be permitted soon on about 1.3-million acres in the 2.2-million-acre Desert Game Range in Nevada, according to the Interior Dept.

Details of specific areas and of restrictions on oil and gas activity will be published soon in the Federal Register. Maps showing areas open to leasing are available now from the Bureau of Land Management, Reno, Nev.

Opening of the area to leasing came through a reclassification agreement reached by the land bureau and the Fish & Wildlife Service.

•

Drilling Highlights

Mississippi—Pan American Petroleum Corp. No. 1 Jeff Holloway, section 24-8n-20w, Jefferson Davis County, was completed for 2,736,000 cf/d of gas and 24 b/d of distillate through 9/64-in. choke and perforations at 13,264-70 ft. in the Mooringsport. The discovery is 4 mi. southwest of Gwinville field, which produces from a shallower formation.

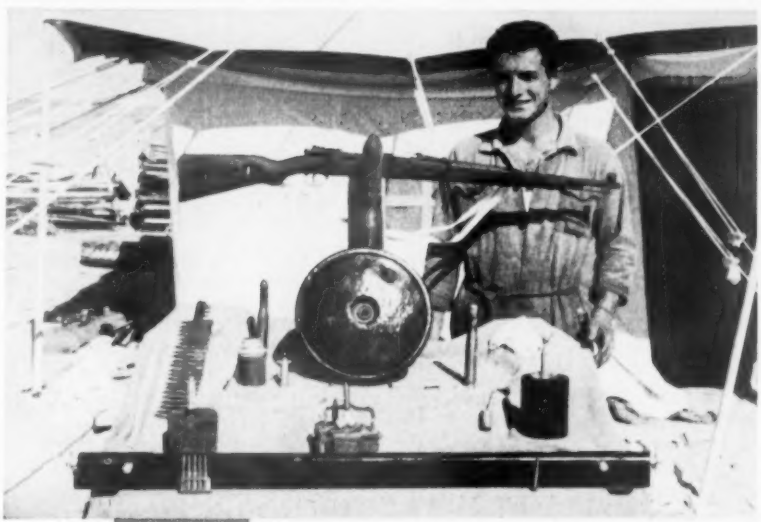
Utah—Triton Oil Corp. No. 1 Bluff Bench Unit, section 15-39s-22e, San Juan County, flowed 91 b/d of 38-gravity oil on production test of the Ismay member of the Paradox at 5,677-82 ft. and 5,699-712 ft. The well is 8 mi. north of production recently established on the south end of the unit by British-American Oil Producing Co.

West Texas—Honolulu Oil Corp. No. 1-N Parker, section 7, block A-44, psl survey, Andrews County, was completed as an Ellenburger discovery flowing 460.8 b/d of 46.3-gravity oil through ¼-in. choke and perforations at 12,516-32 ft. Honolulu also plans to test for production in the Pennsylvanian. The discovery is in the Andrews (Wolfcamp and Pennsylvanian) field.

East Texas—F. R. Jackson, Maxwell D. Simmons, and John C. Robbins, Jr., No. 1 Lone Star Producing Co., Henry Wells survey, Rusk County, flowed 37-million cf/d of gas with 9½ bbl. of condensate per million through perforations at 7,383-92 ft. in the Pettit lime, and 1,230 cf/d of gas with 36.2 bbl. of condensate per million through perforations at 7,606-14 ft. in the Travis Peak. The dual discovery is 5 mi. southeast of comparable production at Willow Springs field.

North Texas—Shell Oil Co. No. 1 G. E. Johnson, section 468, block A, H&TC survey, Foard County, was completed as a Des Moines (Pennsylvanian) discovery flowing 244 b/d of oil through 21/64-in. choke and perforations at 5,772-91 ft. The discovery is located 7 mi. to the east of Rasberry field.

Oklahoma—Sohio Petroleum Co. No. 1-A Lewis, section 32-1n-2e, Murray County, flowed 176 bbl. of oil in 9 hours through 20/64-in. choke and perforations at 5,662-72 ft. on production test of the Third Bromide (Ordovician). Dual completion, with the McLish perforated at 5,960-68 ft., will be made. The discovery, drilled as a tight hole, is 1½ mi. west of Sandy Creek field.



Libyan Sands
Yield Forgotten Arsenal

. . . to GSI crews in their search for oil

Before they can probe the subsurface for geophysical data, GSI field parties in Libya must probe the desert sands for dangerous remnants of World War II.

German Teller mines, British, French, and Italian bombs, artillery shells and other relics of desert fighting are turned up by GSI mine clearance parties in advance of geophysical exploration.

Uncovering and disarming anti-tank and personnel mines isn't usually considered part of a geophysicists' job, but, to get the data its client needs, GSI has taken mine clearance in its stride. GSI counts among its demolition experts former members of the British Eighth Army and Rommel's Afrika Corps . . . now working side by side to reap what they had sown nearly twenty years ago.

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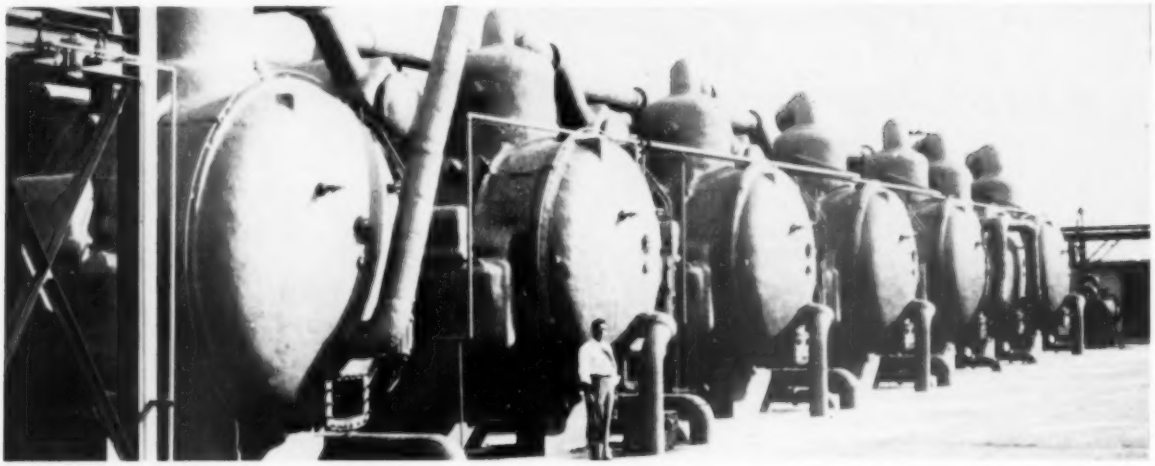


HUGE EVAPORATORS supply all the fresh water needed at Jersey Standard's Aruba refinery. They're one evidence of the . . .

New Emphasis on Desalting Sea Water

A few days ago, the largest installation in the world for converting sea water to potable water was completed at Aruba, Netherlands West Indies, near the Venezuelan coast.

This plant converts 2.7-million gal. of water per day. It is operating in close connection with the refinery of Lago Oil & Transport Co., Ltd., a Standard Oil Co. (N.J.) subsidiary.

Besides supplying fresh water to that refinery at a cost well below that of its former fresh-water supply, the plant also distributes water to the island's population of 55,000.

The method used to convert the water is that of multiple-effect distillation.

One of the outstanding features of this plant is that it combines salt-water distillation with the production of marketable electricity. This reduces substantially the actual cost of water treatment.

The installation, which cost $11-million, was designed and built for the Aruba government by Singmaster & Breyer, Inc., of New York.

The Caribbean sea water has a salt concentration of 35,000 parts per million at 85F. It is first chlorinated to kill algae and barnacles, then passes through a series of heat exchangers, where it cools the outcoming distilled water.

At this point it is subjected to a special treatment, to prevent formation and deposition of scale in the equipment. This "Scalemaster" treatment, an essential feature of the process, was supplied by G. & J. Weir, Ltd., of Glasgow, Scotland.

Then the water passes through a series of steam preheaters, through six evaporators, and a final condenser. Vapor pressure varies from 4.3 psig. to 26½" of vacuum, between the first and last evaporators.

Finally, the distillate, which has less than 5 ppm. of solids, must be aerated and go through some further chemical treatment to remove the flat taste of distilled water and bring its pH to about 8.3. It is stored in four 3.3-million-gal. above ground steel tanks.

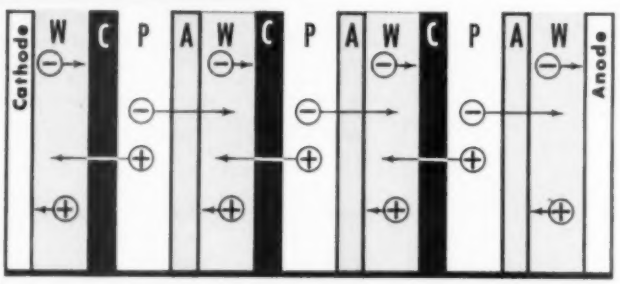
The waste brine, with 75,000 ppm. salinity, is then pumped back into the sea.

The steam for the process is produced in one of two Babcock & Wilcox 200,000-lb-per-hour boilers, using heavy residual fuel oil from the refinery. Two turbogenerators produce 15,000 kw. of electricity, a large portion of which can be sold on the island.

The present production cost of the fresh water at Aruba is estimated at $1.75 per 1,000 gal. But, says Singmaster & Bryer's president, W. H. Finkeldey, taking into account the sale of electric power, the cost of fresh water in a large modern conversion plant should be less than $1 per 1,000 gal.

The problem of fresh-water supply is critical in many spots in the world where petroleum production or processing is carried out—for example, in the desert regions of the Middle East, in certain parts of South America, and on some isolated islands. Huge quantities of fresh water are needed for human consumption as well as for equip-

How Electrodialysis Works



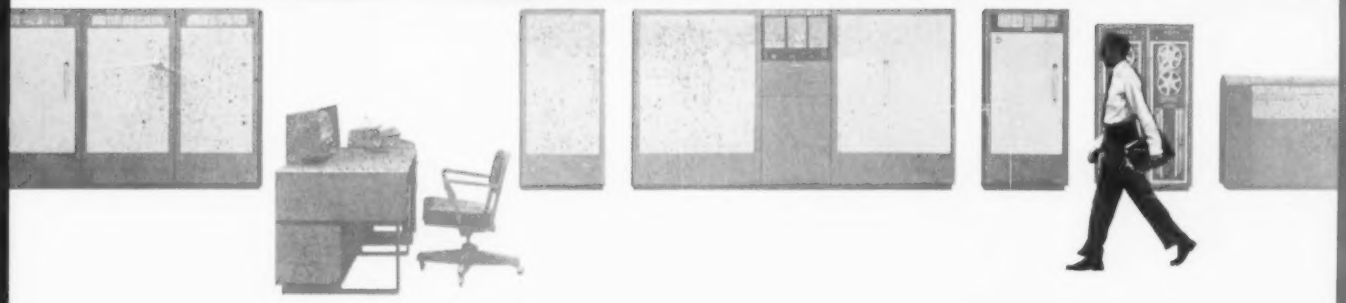
Key:
+ Sodium ions
− Chloride ions

A Membranes permeable to chloride ions only

C Membranes permeable to sodium ions only

P Compartments collecting pure water

W Compartments collecting waste



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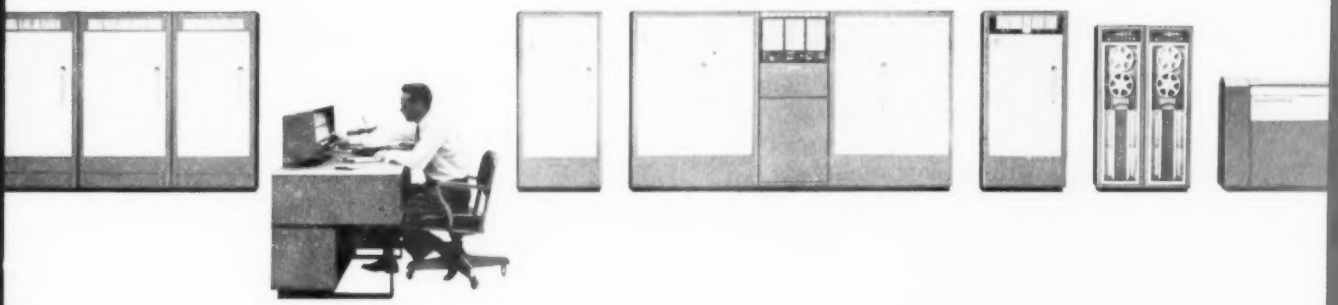

Day-in day-out, the Burroughs 205 is delivering results in a wide variety of petroleum applications. Many prominent companies in the petroleum field have found the 205's speed, 4080-word memory and vast magnetic tape storage ideally suited to handling their application problems. See this thoroughly proven system at work in the M. W. Kellogg exhibit #510 at the **5th World Petroleum Congress in N. Y.** Petroleum applications specialists will be on hand at Burroughs exhibit #361.

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ment in which sea water cannot be used.

According to its design and type of operation, a refinery will need from 15 to 50 bbl. of water for each barrel of crude processed, plus potable water for the personnel and, in many cases, their families.

Distillation is only one of many methods that can be used to convert salt water into fresh water.

It is, however, the most widely used method for freshening vast quantities of water having a high concentration of solids. Distillation plants are installed in Gibraltar, Ecuador, Bermuda, the Virgin Islands, Kuwait, Curacao, and Peru. The Bahamas are now installing a 1-million-gal.-per-day plant.

Another popular way to freshen water is by the electric-membrane method, or electrodialysis.

Instead of removing fresh water from brine by evaporation, this process removes the salt from the water. Direct electric current charges an anode (positive electrode) at one end of a tank, and a cathode (negative electrode) at the other end (diagram, page 38). Between the electrodes are several compartments, separated by plastic membranes.

When the current is turned on, the positive ions (sodium, calcium, magnesium) move toward the cathode, the negative ions (such as chlorine) toward the anode.

The plastic membranes act as selective one-way valves. One type allows the sodium ions to go through, but stops the chlorine ions. The other membrane, of a different plastic, lets the chlorine ions through and stops the sodium ions. Thus, all the salt ions leave the "water compartments," and collect in the adjacent "waste compartments." In view of the appreciable quantity of electricity required, this method is applied mostly to brackish waters, that is, water having a maximum concentration of 10,000 ppm. of salts.

Ionics, Inc., of Cambridge, Mass., is one firm that has developed this process; it has made about 30 installations. The largest one treats 90,000 gal. per day at the Bahrein Petroleum Co. installation on the Persian Gulf. It supplies potable water to a community of 5,000.

Arabian American Oil Co., in Saudi Arabia, has four Ionics units. And several Ionics installations are in operation in the U.S.

The power consumption for the pumps in an average installation, as well as for the rectifiers for ion transfer, is indicated by Ionics, Inc., as being 5 to 7 kwh. per 1,000 gal. per 1,000 ppm. of salt removed. Membranes cost from $1,200 to $1,500 per stack per year. Costs are said to be somewhat lower for large installations.

Variations of the membrane process are being studied, in attempts to reduce or even eliminate entirely the electric power consumption.

These processes utilize the principle of "osmosis," or filtration through selectively porous surfaces. They have not yet been applied commercially.

Another method uses separation by "freezing." The University of Minnesota is working on a method to remove pure water from brine slush at a temperature just above —6F, where salt water freezes.

Texas A. & M. is studying a solvent extraction method. A solvent soaks up the water but not the salt. The solvent-water mixture is removed, then heat separates the fresh water from the solvent, which is reused.

An ion-exchange method can also be used. It works like a home water-softener, with ion-exchange resins, but is quite costly.

Nuclear energy may bring new methods. But it is difficult to predict how these methods may work.

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A Quicker Way to Analyze Crude

Evaluation of a crude sample, which formerly took many days of complex laboratory work, can now be done in a few hours by using gas chromatography, according to J. C. Winters, of the analytical research labs of Standard Oil Co. (Ind.)

An idea of the complexity of the conventional laboratory processes needed for such an analysis can be formed by considering the various tests that are required.

For example, "key fraction" tests must be made to determine the portions of the crude that boil between two predetermined temperatures. Large and complicated equipment such as the "true-boiling-point" distillation apparatus, are used for that purpose.

The "viscosity-temperature" relation is another most important property that has to be studied for the evaluation of a crude. Viscosity-index and viscosity-gravity-constant determinations are closely related to it. These too require delicate instrumentation and many hours of work.

The "gravity gasoline content" of the crude is another value needed.

Finally, a rule-of-the-thumb test is usually made by comparing the properties of the crude in question with those of known crudes.

Gas chromatography, Winters explained, makes it possible to study the distribution of isomers of the hydrocarbons of each molecular weight. Studies have been completed so far up to and including seven carbon molecules.

Chromatography is of particular value, Winters says, because it can separate, through selective osmosis, isomers whose boiling ranges are very close.

Furthermore, the instruments for chromatographic analysis—essentially absorption columns and thermal-conductivity elements—are relatively simple (PW—May8'59,p40).

"We were able with little effort," says Winters, "to find and measure compounds not previously found in crudes, to produce sufficient data to challenge several old generalities, and to propose some possible explanations for the composition of light naphthas. Knowing the precise composition of the crude and how it will react during different refinery operations will permit more economical and efficient production."

Winters revealed the present status of his studies this week at the Fifth World Petroleum Congress, in New York. The work started as far back as 1940, as a method of determining comparative content and isomer distribution in crudes of light hydrocarbons, particularly the hexanes. Purpose was to evaluate the yield of high-octane gasoline that could be expected from these crudes during subsequent isomerization in the refinery.

An important part of the process, Winters explained, consists in the judicious selection of absorption fluids and lengths of absorption columns for the chromatographic processes.

For example, it takes a 40-ft. column containing 2.5% of 1-chloronaphthalene to separate the isomeric hexanes and cyclopentanes, and the operation takes less than 30 minutes.

"Future process developments," said Winters, "may require component analyses of higher boiling fractions. The extension of gas chromatography techniques to these fractions will involve the development of new methods."

This can readily be visualized, considering that there are only 9 possible isomers for the aliphatic hydrocarbon of seven carbon atoms, while heavier-molecular-weight hydrocarbons in crude oils have an almost endless number of isomers. For example, a 25-carbon-atom product may have 797 isomers.

Refinery-Utility Exchanges Pay

Refiners who are anxious to obtain the ultimate in improved thermal efficiency are increasingly entering into cooperative agreements with public utilities, through which they "barter" fuel against electric power, steam, and treated water.

This was brought out forcefully in the past few days, both at the Fifth World Petroleum Congress, and at the semiannual meeting of the Refining Division of the American Petroleum Institute.

R. B. Smith, vice-president, and D. B. Rossheim, chief mechanical engineer, of M. W. Kellogg Co., New York, presenting some problems in the mechanical design of process plants to the Congress, said they see a justification for these exchange agreements in the greatly increased initial pressure of steam power plants, and the consequent increasing use of back-pressure and extraction-induction turbines.

Such installations, and their gratifying high efficiencies, they said, are considerably more expensive than the steam boilers of more moderate pressures which even the most modern refineries used to install up to a few years ago.

Conversely, a steady, economical, source of fuel, be it solid, liquid, or gaseous, is a decided asset to the public utility, when no hydraulic source of power is available.

An exchange of refinery fuel for public utility steam and power should be considered in a great variety of cases, even without an immediate saving in refinery operating cost, E. J. Hess, of Esso Standard Oil Co., and V. E. Kilpatrick and G. H. St. Onge, of Esso Research & Engineering Co., told the API meeting.

This is particularly true, they said, when the refinery has a large output of material suitable for firing steam boilers, or when a seasonal high demand for distillates results in a surplus of residuals.

It is therefore good economy whenever geographical conditions permit, they said, for a public utility company to build a power plant close to a refinery, and to reach an exchange agreement favorable to both parties.

Such agreements have existed for some time on the Pacific and Gulf Coasts.

Two typical exchange agreements on the East Coast, which have paid handsomely in recent years are: (1) Delaware Power & Light Co. with Tidewater Oil Co.; and (2) Public Service Electric & Gas Co. (N.J.) with Esso Standard Oil Co.

The Tidewater-Delaware agreement has been in satisfactory operation since December, 1956.

The refinery supplies the power plant with all its excess gas, and with fluid petroleum coke, Bunker C, or other acceptable fuel oil.

The power plant, in return, supplies the refinery with electric power and with all of its steam, as well as with its huge requirements for process water received from the refinery, adequately treated, and returned.

Delaware Power & Light has invested the entire cost of the power plant. But Tidewater pays for all its

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No. 900 Black, 14 mils. No. 910 Gray, 12 mils. No. 940 Black, 12 mils. No. 940 Gray, 12 mils.	13.66	12.20	11.02	9.76	8.54	8.04	7.62
No. 920 Black, 20 mils.	19.30	17.22	15.56	13.78	12.06	11.39	10.76

PIPELINE ROLL—3 inch I.D. Core—400, 600, 800 ft. length—Price Per Square, Dollars

Quantity, Squares	Less than 102	102 to 500	501 to 1499	1500 to 2999	3000 to 5000	5001 to 25001	25002 and Over
No. 900 Black, 14 mils.	13.66	12.20	11.02	9.76	7.90	7.44	7.04
No. 920 Black, 20 mils.	19.30	17.22	15.56	13.78	11.16	10.52	9.95

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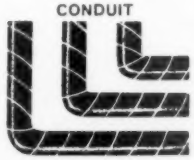
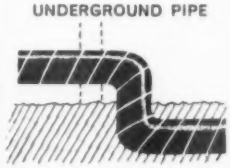


UNDERGROUND PIPE



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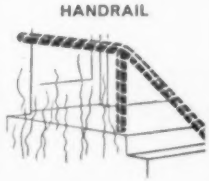
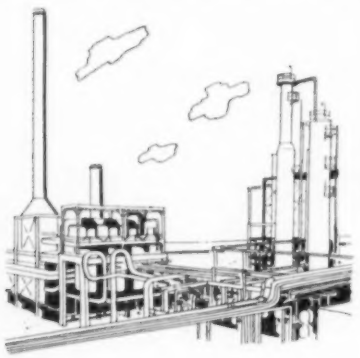


"T" JOINTS, ETC.

on stream in the United States

ANOTHER
HOUDRIFORMER



Texas City Refining, Inc.
Texas City, Texas

Naphthas are transformed into clear, high octane gasoline in this new HOUDRIFORMER. Nominal design capacity is 7,000 BPSD.

Two Houdry catalysts contribute to economy and flexibility of operation—Houdry 3-G Platinum Reforming Catalyst, and Houdry Cobalt Molybdate Catalyst.

HOUDRIFORMING is the second Houdry process licensed to Texas City Refining. The first was HOUDRIFLOW catalytic cracking embodied in a 19,000 BPSD unit.

This dual service to Texas City Refining illustrates Houdry's ability to serve you. Write for a technical description of Houdry processes and data on Houdry catalysts today.

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operating and maintenance expenses, and is gradually amortizing the utility's investment.

Steam and electric power are produced at very high efficiency, as initial steam is generated at 1,300 psi. and 950F.

The Esso-Public Service agreement is more recent. It differs somewhat from the Tidewater-Delaware agreement, particularly in that it does not tie the two organizations together financially on such a close basis.

Esso's Bayway refinery purchases electric power at the standard commercial rate. It also pays a fixed charge to Public Service every month for steam, regardless of the quantity it uses.

In return, Bayway provides Public Service with a fixed quantity of fuel per pound of steam taken, and with the water required to generate the steam.

Steam is generated at an initial pressure of 2,000 psi. and a temperature of 1,050F. The fuel supplied by the Bayway refinery consists essentially of high-viscosity residual oil, with Bunker C fuel oil whenever needed as a complement.

There are certain cases, however, when such exchange agreements are not recommended, the Esso engineers pointed out.

This would be true, for example, when the utility company has a large supply of very-low-cost energy, such as water power, or natural gas from nearby wells. It would then be in a position to supply power and steam whether an exchange is in effect or not.

This would also be the case when the refinery operates certain processes which generate waste heat that can be recovered at relatively low investment cost, and cannot be used in the process itself, or when the refinery residuals can be used more profitably elsewhere.

Mutual agreements of this nature can also be visualized between public utility companies and petrochemical manufacturers.

The power plant would use as fuel any gas which the petrochemical plant could not upgrade, thus serving as balance wheel where seasonal demand for certain products is likely to cause serious fluctuation in operations.

What's New / IN PROCESSING

A new instrument, which automatically measures and records gravity in crude oil, has been developed by Sinclair Research Laboratories, Harvey, Ill.

This continuous gravity recorder, called the Sinclair-Cenco Controlling & Recording Gravitometer, makes possible the automatic blending of two different crude oils to a constant outgoing gravity. It is said to have a high degree of sensitivity, with an accuracy of plus or minus 0.1 degree API.

Central Scientific Co., of Chicago, has been licensed by Sinclair to manufacture and sell the new instrument.

•

International Lubricant Corp., a subsidiary of Shell Oil Co., has centralized its grease-testing and research facilities at its new headquarters, just outside New Orleans.

The new facilities, housed on a 23-acre tract, are divided into four sections—oil testing, grease testing, research, and the pilot plant. Oil and grease testing facilities will now be supplemented by ILC's wet-and-dry oscillating machines and heated roll test.

Other features of the new lab include a walk-in cold room where greases are tested at —40F, a uniform temperature room (77F), a spectroscope and electronic colorimeter, and a comprehensive reference library.

•

Dow Chemical Co. has doubled its polyethylene capacity with the completion of its second plant at Freeport, Tex. Expansion of the original Freeport plant was completed last fall. As the new unit went on stream, Dow also announced the start of construction on two other polyethylene plants —one near Plaquemine, La., and the other at Bay City, Mich.

•

A $3-million natural gas plant will be built in Eddy County, N.M., by Skelly Oil Co., Tulsa, and a yet unnamed second firm. According to a company spokesman, Skelly will operate the plant, and will split construction costs with the second firm. Completion is scheduled for the early part of 1960.

THIS makes the difference!

Wear and corrosion of silver wrist pin bushings and copper-lead bearings was once a serious problem in railroad diesel engines. No more.

"Ethyl" Antioxidant 702 definitely minimizes deterioration of these vital parts. Here's proof:

Shown above at the left are silver and copper strips tested for 72 hours at 275°F. with a commercial oil containing no "Ethyl" Antioxidant 702. Note the corrosion. On the right identical pieces comparably tested but using 702 as *the* antioxidant—show no evidence of metal attack.

The reason? 702 is completely inert... contains no potential corrosive of any kind. This, of course, is in addition to the striking ring wear inhibition provided by this new member of Ethyl's antioxidant family.

Now you can offer your customers the corrosion-proof and antiwear oils they need to cut maintenance and replacement costs. Now engines—like diesels with silver wrist pin bushings and other parts of copper, copper-lead, or bronze—will run more economically ... for longer periods.

Like to know more about this versatile, high-temperature antioxidant—now commercially available? Ask your Ethyl Representative. He'll be glad to see that you get the facts.

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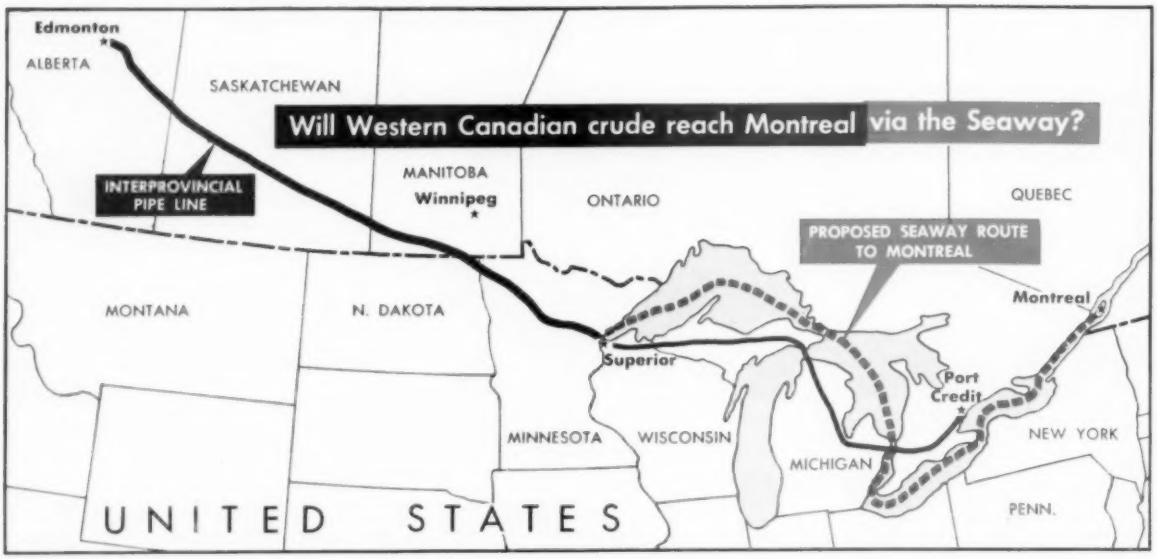

Refiners Study Seaway Crude Flow

The St. Lawrence Seaway may yet play an important role for oil—as a temporary stimulus for bringing Western Canadian crude to Montreal refineries.

The Seaway, opened in April, has not, until now, excited many oil transporters as a major new route for oil traffic. And what little they did envision was foreign crude moving inland.

Now they're not so sure:

Two major-company refiners at Montreal are reportedly studying the possibility of taking Saskatchewan crude through the Interprovincial system to Superior, Wis., and by tanker from there to Montreal.

A Western Canadian crude purchasing company told PETROLEUM WEEK recently that the two majors had approached it independently to determine whether a pipeline-Seaway route to Montreal could land crude there at competitive prices. Taken together, the companies are asking for about 20,000 b/d.

The refiners are considering taking southeastern Saskatchewan Weyburn-Midale crude, medium-gravity, through the Interprovincial system to Superior (map). There the crude would be loaded aboard 10,000-ton tankers for bonded movement to Montreal.

Current price weakness of the Saskatchewan crude is making the movement increasingly attractive to the Montreal refiners.

Effective July 1, the Weyburn-Midale crude will be delivered by Interprovincial to Sarnia refiners at $2.34 a bbl. This same crude, Western Canadian sources say, could be put down by pipeline-Seaway at Montreal at about $2.36 bbl.

This would be close to the landed price for similar Venezuelan crude.

And mounting pressure from the Canadian government for the use of more Western Canadian crude in domestic refineries also makes the deal worth considering.

The government is expected to make strong recommendations to insure Canadian markets for Canadian crude when it issues the final Borden Commission study for energy, due late this month.

But a Seaway crude movement won't assume really significant proportions until several sections of the Seaway are deepened enough to make T-2 tanker shipments possible.

Most T-2s, Seaway officials say, would have about 25½-ft. draft when operating nearly fully loaded. (And the T-2s would have to be very nearly fully-loaded in order to make the Superior-Montreal trip economical.

A few sections of the Seaway at present don't have such draft.

The Canadian section between Montreal and Massena, N. Y., for instance, now has a draft of about 22½ ft.

And connecting channels between Lake Superior and Lake Huron, and Lake Huron and Lake Erie, now have 21 ft. draft upbound (heading inland) and 25 ft. draft downbound.

Current Seaway construction plans could clear the way for T-2s by 1961.

The Canadian-section draft will be deepened to 25½ ft. later this month. And the U.S. Corps of Engineers will have similar channels open for limited traffic between the lakes by 1961.

The proposed Seaway leg for Western Canadian crude to Montreal would give way to pipeline transmission if and when such a crude flow increased to at least 100,000 b/d.

If the flow were to remain below this level, the pipeline-Seaway combination route would retain an economic advantage.

Right now, however, the Seaway is carrying a surprisingly high amount of oil from the Atlantic down into the Great Lakes area.

The Seaway had scarcely opened when the 22,000-ton St. Remi—with oil only in her side tanks because of the draft problem—delivered 10,000 tons of Texas City (Tex.) product at Hamilton, Ont.

Downbound, she loaded grain at the Lakehead for Canadian-owned flour companies in Venezuela.

The St. Remi is scheduled to make five such oil-grain trips.

Two similar shipments are planned for the Petra Dan, an 11,000-tonner. Other tanker movements from the Atlantic are also expected soon.

More than good equipment is required to perform a pipe laying job. It takes men with skill and imagination too.

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Patrol Car Radios Help Run Line

Two-way radios in pipeline patrol cars are having two-way effects—in improved line maintenance, and happier public relations—for Imperial Pipe Line Co., Ltd., the Imperial Oil Ltd. affiliate which operates 325 mi. of Alberta crude lines.

Imperial put the $1,000 sets in its fleet of 45 cars a few years back.

Imperial says the "little boxes" have paid for themselves by making its maintenance operation flexible and fast-moving.

Says Rollin Snyder, Imperial's field supervisor: "Directions can be given to men where they are and reports can be received back from them promptly.

"When a leak occurs, the two-way radios often make the difference between getting the line back in operation in a few hours and closing down a whole section for days."

But the bonus advantage of the two-way radios—outstanding public service—is almost as important, Imperial feels. Its radio patrol cars have been called on to help injured people, to find lost cows, to help right overturned milk trucks.

Says Snyder, "The sets have paid off in pipeline work, and everyone's happy if they do a job for others, too."

What's New
IN TRANSPORTATION

Two more companies have applied for permission to build the first crude system in northeastern British Columbia.

Peace River Oil Pipe Line Co. suggested such a system—a 225-mi. carrier from Milligan Creek, Beatton River, and Boundary Lake fields to its Sturgeon Lake terminal—about six weeks ago (PW—Apr.24'59,p65).

Gibson Crude Oil Purchasing Co. and Trans-Prairie Pipelines, Ltd., filed similar plans late last month.

The British Columbia Transport Ministry will hold hearings on the applications June 15.

•

Trunkline Gas Co. has received Federal Power Commission authorization to expand the capacity of its transmission system by 135-million cf/d.

Trunkline is adding the capacity to serve two new customers—Consumers Power Co., Jackson, Mich., and Michigan Gas Utilities, Coldwater, Mich.

The expansion will cost Trunkline $81-million.

•

Revenues of 73 oil pipelines during the first quarter of 1959 were up 11% over a year ago.

The companies' reports to the Interstate Commerce Commission show combined revenues of nearly $183-million during the three months.

At the Congress: The Approach to Oil Transportation Is Broad

The importance of efficiency in oil's land and sea transportation facilities received new emphasis at this week's World Petroleum Congress in New York City (page 13).

Several of the papers delivered at the Congress stressed the significance of current and future oil transportation developments.

In pipelining, for instance, microwave communication is making for great strides in remote-control operations.

Fred S. Jones, of Platte Pipe Line Co., said, "A rapid succession of significant advances in pipeline operations have and will continue to come about largely because of microwave . . . including . . . unattended remotely-controlled booster stations and injection and delivery stations; automatic data logging; and, eventually, automatically computed and programmed operations."

New thin film coatings will also increase pipeline operating efficiency, according to a team from Esso Research & Engineering Co.:

"The properties of thin film coatings, when properly selected, meet the necessary requirements for pipeline protection, and may be competitive with the materials presently used."

In tanker operations, cost efficiency now dictates a delay in the coming of the atomic tanker.

Loren F. Kahle and A. J. Kelly, Jr., of Standard Oil Co. (N. J.), said, "One comprehensive study of nuclear shipping economics indicates that by 1965 nuclear shipping will be only 30% to 35% more expensive than commercial shipping.

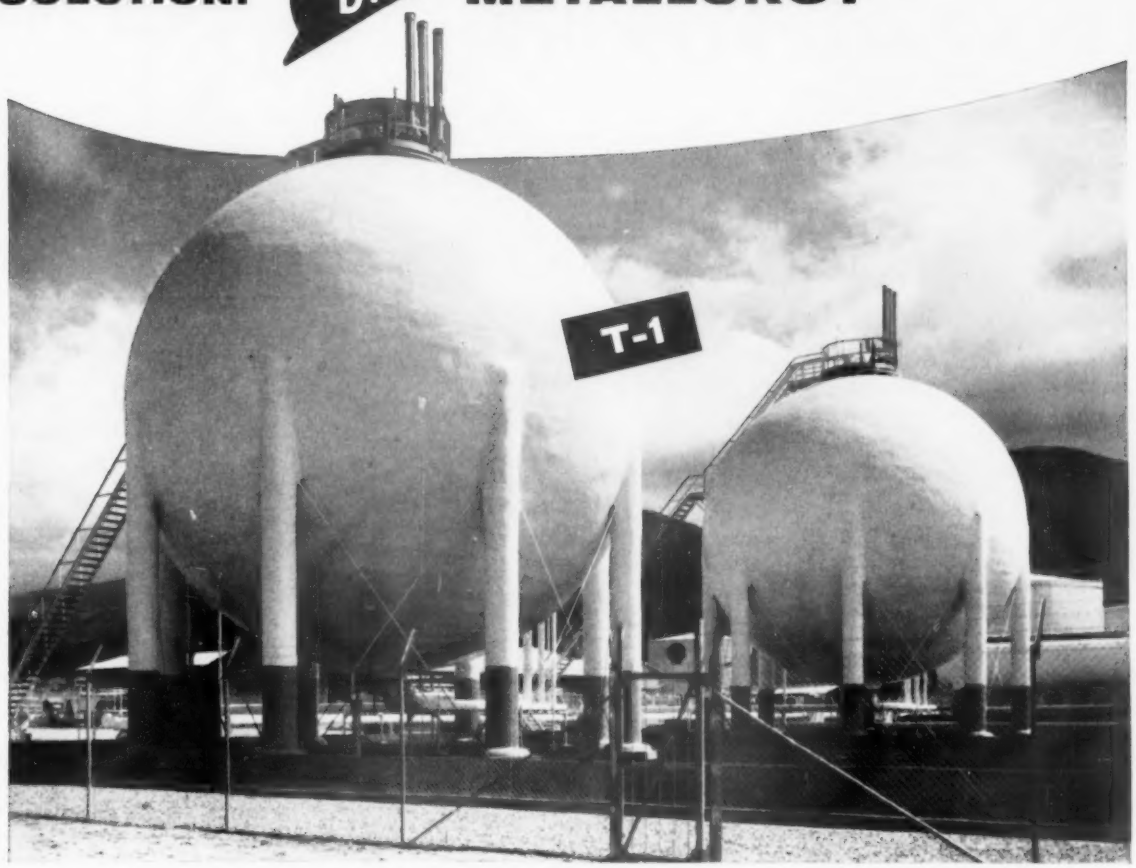
"The date when a nuclear plant will first operate a commercial tanker is pure conjecture at present."

But overseas shipment of liquefied methane is now both possible and profitable, in the view of John A. Murphy and C. G. Filstead, of Constock International Methane, Ltd.:

"Ocean transportation of liquid natural gas is now technically and economically practicable . . . Transportation of this material [is] as safe as, or safer than, the transport of any petroleum product."

PROBLEM: More Propane for Caracas

SOLUTION: CB&I **METALLURGY**



Why 2 HORTONSPHERES® do the work of 20 Tanks

Increased usage of propane in Caracas made it necessary for Compania Shell de Venezuela Ltd. to either (1) add to the company's already crowded bulk storage facilities at *Catia La Mar* or (2) place another tanker in service.

Thanks to CB&I *craftsmanship in steel*, Shell was able to solve its problem without additional shipping expense; and without adding more real estate.

Two 6,900-barrel capacity Hortonspheres, designed by CB&I for 235 lbs. working pressure, were fabricated at our Greenville plant of T-1 steel. The strong alloy made it possible for the two high pressure vessels to store as much propane as 20 smaller, mild steel vessels.

CB&I's practiced knowledge and extensive facilities for designing, fabricating and erecting structures of modern metals made these savings possible. The most complete metallurgical testing facilities, which include X-ray and stress relieving services in shop and field, have made the experienced capabilities of CB&I *in demand* . . . all over the world.

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SPECIFICATIONS

2 HORTONSPHERES—
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Compania Shell de Venezuela Ltd.

Capacity: 6,900-bbl. each

Pressure: 235 lbs. per sq. inch

Steel: T-1

Diam: 42-ft.

METALLURGICAL CONTROLS

Joint Efficiency—95%

Stress relieved in field

X-rayed 100% in field

Hydrostatic test: 354 lbs. sq. in. (at top of vessel)

Design: In accordance with ASME Code Case #1204-3

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Libya Looks Even Better

News last week of an eighth discovery in Libya plus Jersey Standard's optimistic notices on its Zelten well, add up to increased excitement over Libya's oil possibilities.

"It's really beginning to look like an oil country," says one oil company executive.

Not that there hasn't been a lot of interest up to now. The 15 companies operating in Libya have 13 rigs in the country, with 8 more slated to arrive before the end of the year (PW—Apr.24'59,p69). This makes Libya one of the world's hottest wildcatting areas outside the U.S.

Gulf Oil Corp. is now drilling ahead in its initial discovery, the No. 1 Emgayet, to test deeper horizons (PW—May29'59,p10).

The wildcat, located about 200 mi. south of Tripoli, flowed 35-gravity clean oil at the rate of 750 b/d on test of an interval at about 4,100 ft. It was Libya's eighth discovery in the past 17 months, and the fourth in the past two months.

In the meantime, Jersey Standard announced that it may have opened Libya's "first important oil field." M. J. Rathbone, company president, told stockholders last week, "Just last month we had a very good new discovery well in Libya. We think it may be on an extensive structure, and be an important discovery."

He added: "If it turns out that we have opened up Libya's first important field, it will be a valuable addition to Jersey's widespread resources, particularly as a supplementary supply source for European customers."

The company, which has another discovery in the Fezzan, has reentered the pay zone of its Zelten discovery in a sidetracked hole at 5,440 ft., and expects a completion "soon."

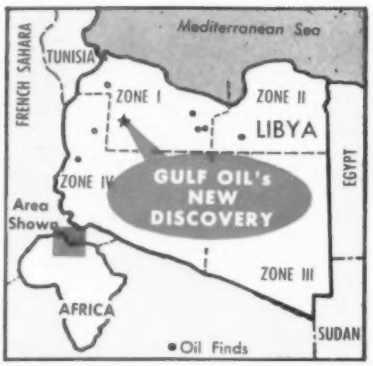
The wildcat initially tested 100 bbl. per hour of a sour, 37-gravity crude through ⅝-in. choke from about 5,400 ft. The test, on Block 6, Zone 2, about 100 mi. from the Mediterranean, reportedly has a pay section about 250 ft. thick.

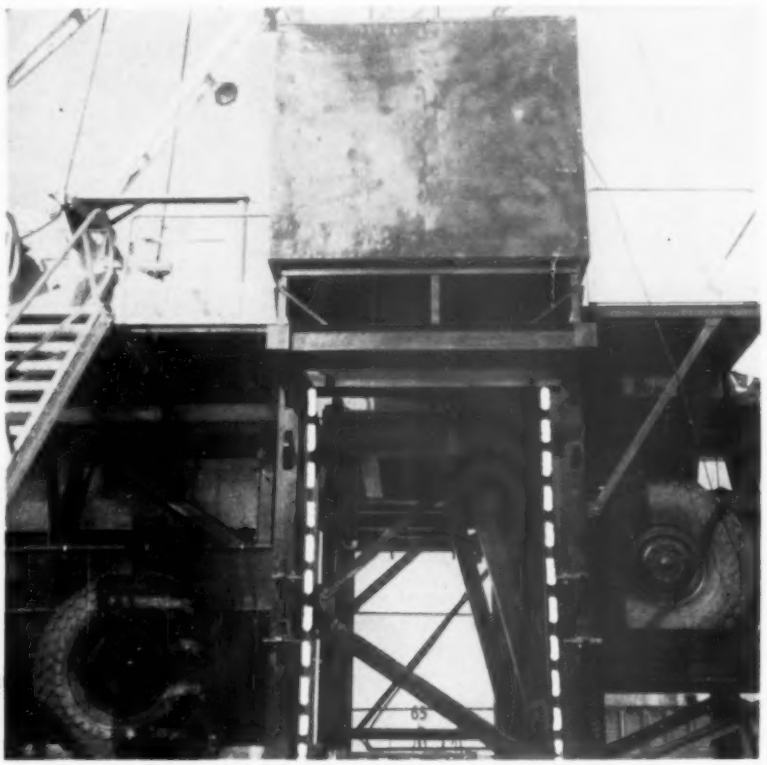
Some reports from France say the well is capable of producing 26,000 b/d.

Meanwhile, Shell, which recently had a discovery at Bir Tlacsin, is working on a wildcat prospect in Block 69. The company's A-1-69, Zone 1, was started as a water well. But, the company later decided to switch to a structure drilling program, and the test cored some oil shows. Shell then reclassified the test as a wildcat, and brought in a heavier rig to continue drilling.

At the moment, drilling is suspended at 3,162 ft., waiting for spare parts for the drawworks.

Cie. Francaise des Petroles, which found oil in its initial Libyan wildcat, has some gas shows at its No. 1 Oued Chebbi, Block 23, Zone 1. The company is now drilling below 6,737 ft. The company is also drilling below 2,296 ft. in another wildcat, the No. 1 Bir El Jaja, 20 mi. northwest of Chebbi.





LIBYA-BOUND for use on a sun-parched Socony Mobil concession is this . . .

New Rig Designed for Desert Use

Socony Mobil will soon be using this new medium-depth rig in Libya. It was designed specifically for easy mobility across rugged terrain and sandy wastes by a Socony affiliate and Unit Rig & Equipment Co.

The rig was fabricated by Unit at its Tulsa yard. From Tulsa, the rig will be shipped to Houston for boxing by Lee Construction Co. Around June 15, it will leave the U.S. for one of Mobil Oil of Canada's big desert concessions in Libya. It should arrive about three weeks later.

Mobil hopes to have the unit on location 400 mi. into the desert within 15 days of uncrating.

The rig actually contains few innovations as such, but the unusual com-

AERO CREWS NOW AT WORK THROUGHOUT THE WORLD

. . . ready to accept new assignments anywhere

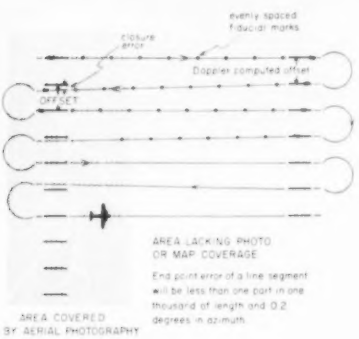
Save for areas behind the Iron Curtain, Aero Service Corporation crews are conducting petroleum surveys in almost every corner of the globe.

One technically dramatic example is the recently completed airborne magnetometer survey covering 30,000 sq. mi. of northern and coastal areas of the Spanish Sahara. The airborne record was completed in one month. Aero will deliver magnetic maps to the Spanish Government this week. These maps will show basement depths and structures. Sixteen participating oil companies will use the maps to help determine their application for exploration rights.

This survey, over previously unmapped, unphotographed terrain, could not have been completed, say Aero geophysicists, without the aid of RADAN® Doppler guidance—the newest navigational aid for airborne exploration.

Other air magnetic surveys for major oil companies are being conducted by Aero crews in Venezuela, Italy, Turkey and Australia, according to Aero's technical staff. At home, Aero is engaged in a joint survey in the Appalachian Basin.

Still other Aero crews are sighting in on mineral targets in Korea and Thailand, using Piper Apaches for excellent, low-cost "work horse" coverage. In the Middle East, Aero's available aircraft includes the B-17, which has photographed over one million square miles from altitudes of 30,000 ft.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End point error of a line segment will be less than one part in one thousand of length and 0.2 degrees in azimuth
AREA COVERED BY AERIAL PHOTOGRAPHY

DOPPLER guides the survey over faceless terrain, without maps, photos, ground stations. Survey plane is brought to starting point electronically. Pilot flies under guidance of Pilot's Direction Indicator, and the RADAN® computer automatically signals the end of the line. Doppler navigator guides the turn electronically. Offset is automatically recorded, computed and corrected.

Aero's DC-3 at advance base for 40,000 mile Doppler-guided survey.

PIPER APACHE: Low cost exploration "work horse".

Aero representatives will be at Booth 627 at the World Petroleum Congress Show to provide complete information on the experience and capabilities of these Aero crews. They are ready to accept new contracts anywhere. Find out how these "on location" teams can cut mobilization costs for your overseas project.

The company's complete services include airborne magnetometer surveys, geophysical interpretation, aerial photography, photo interpretation, photo mosaics, relief models, and topographic mapping. It employs RADAN®, Shoran, Lorac and Raydist plane positioning systems.

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Oldest Flying Corporation in the World

Philadelphia 20, Pa.

bination of equipment and design make it a standout in any driller's league.

To cut down on the weight factor in transportation, and to increase mobility, Unit has mounted all components on five separate trailers—one each for derrick, drawworks, mud pumps, utilities, and substructure.

The trailers are equipped with big "sand-flotation" tires, measuring 63 in. in diameter and 23 in. in width. All wheels, except those on the substructure, are mounted tandem.

The trailers will be pulled by Kenworth Model 853 diesel-powered trucks mounted with dual sand-flotation tires. Rear-axle drive will be used.

The substructure is of unique design, which permits the rig to be set up without sills or matting.

This has been made possible by welding heavy-gauge steel plating to the undersides of the substructure at all peak-load points. Considerable savings in location preparation and rigging up time are expected.

Another time-saving feature incorporated in the substructure is a blowout preventer dolly mounted on tracks. This permits the equipment to be quickly and safely centered under the rotary pot after the rig is up.

Rigging-up time will be cut to a minimum by the rig's design. Here's how the operation is carried out:

The center substructure is jockeyed into position oversetting the surveyor's stake. After runners are laid for support, the drawworks and derrick trailers are backed into position flanking the center structure on each side (picture).

The pump trailer is pulled alongside, the utility trailer is moved in nearby, and the crew is ready to punch hole.

Mobil says it is figuring on 2½ days' moving time from one location to the next in Libya, using native manpower for the most part, and using off-the-road transportation. A Unit Rig spokesman says one day would be sufficient for an experienced crew to rig up under normal conditions.

Slush pump, drawworks, mast and power source are of conventional design.

The mast is a 126-ft. Lee C. Moore. Drawworks are Mid-Continent's Model U-36-A, designed for depths to 9,500 ft., powered by two Cummins VT-12 diesels. The slush pump is a Continental-Emsco D-300, powered by another Cummins diesel.

Two diesel generators in the utility trailer provide electricity for rig lights and incidental equipment.

1975 Oil Demand: Over 40-million b/d

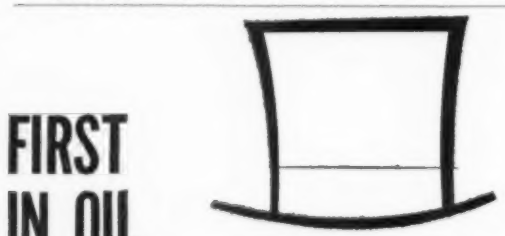
Two predictions that world oil demand would climb above 40-million b/d by 1975 were made at this week's World Petroleum Congress, in New York.

The first was made by N. B. Guyol, of California Standard's economics department, in a paper entitled "The Role of Petroleum in World Energy Supplies." He estimated that demand would reach 46.2-million b/d by 1975, "about 39% of the world's total energy equivalent of 118-million b/d."

The second, a prediction of about 41-million b/d, was made by Paul R. de Ryckere, of Caltex, secretary of the Belgian delegation to the Congress.

The factors governing oil's position in the energy economy are changing, however, the California Standard economists said.

Total energy requirements are increasing; oil costs are declining relative to costs of coal, its principal competitor; and traditional fuels—domestic coal, wood, and water power—are becoming relatively expensive. On the other hand, availability of low-cost natural gas is increasing, and nuclear fuels are now appearing.



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But there's still time to be well informed on the whole oil industry—with Petroleum Week's variable-speed reading

When you're in a real hurry and want a quick run-down of what's going on in the industry, just scan the bold-face type in each article. This gives you the essential facts and main points of interest in fast-reading capsule form.

For complete details on items that are of special interest, read the light-face type as well as the bold. Here you get the complete story, in simple, non-technical language—easy to read and understand.

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What's New / AROUND THE WORLD

PERU—Cities Service and Richfield have come up with a discovery 3 mi. off the north coast opposite the mainland Lobitos field (PW—Mar.13 '59,p85). The well, drilled from Richfield's "Rincon" drilling barge by Cities Service's Peruvian Pacific Petroleum Co., tested at the rate of 416 b/d of 38-gravity oil through ¼-in. choke from 2,807-996 ft. A previous offshore test was abandoned at 5,662 ft.

•

KUWAIT—Kuwait Oil Co. is drilling ahead in its "significant" new discovery well at Minagish, 21 mi. west of the Burghan field. The exploratory well tested at the rate of 1,660 b/d through ⅝-in. choke from a 5-ft. perforated interval at nearly 10,000 ft. in the Ratawi limestone. Flowing pressure was 600 psi. The Gulf Oil-British Petroleum affiliate says the crude is about 34.5-gravity, with a sulfur content of 1.90% by weight.

•

BOLIVIA—Oil companies expect to invest $25-million in Bolivia this year. Last year they invested $27-million. These figures were disclosed at a recent meeting of oil company managers and government oil officials. The meeting was held to discuss the "facilitating" of oil operations.

•

SPAIN—The government's distribution monopoly, Campsa, is about to break commercial relations with a Caltex affiliate to enter into a partnership with Richfield and Cities Service, according to oil circles here.

In addition, the Spanish company will reportedly operate jointly with the two American companies in oil exploration in the Spanish Sahara and the Spanish peninsula.

•

PERU—Belco Petroleum Corp., New York, will drill 12 holes on its new concessions acquired last week from Petrolera Peruana S.A., a local company. The 538,460 acres involved represented all of Petrolera's holdings, including the Mirador field, which has 11 wells producing a total of 310 b/d. Some of the new holes will be development wells.

•

USSR—The government has reported a "very important" natural gas discovery in the huge but fuel-short Yakut Autonomous Republic, in Siberia. An exploratory well, drilled near the junction of the Vilyuy and Lena Rivers, is producing about 106-million cf/d. Soviet geologists estimate that the gas-bearing area is the biggest in Siberia, with deposits estimated between 700-billion and 880-billion cu. ft. in a 65-sq. mi. area.

•

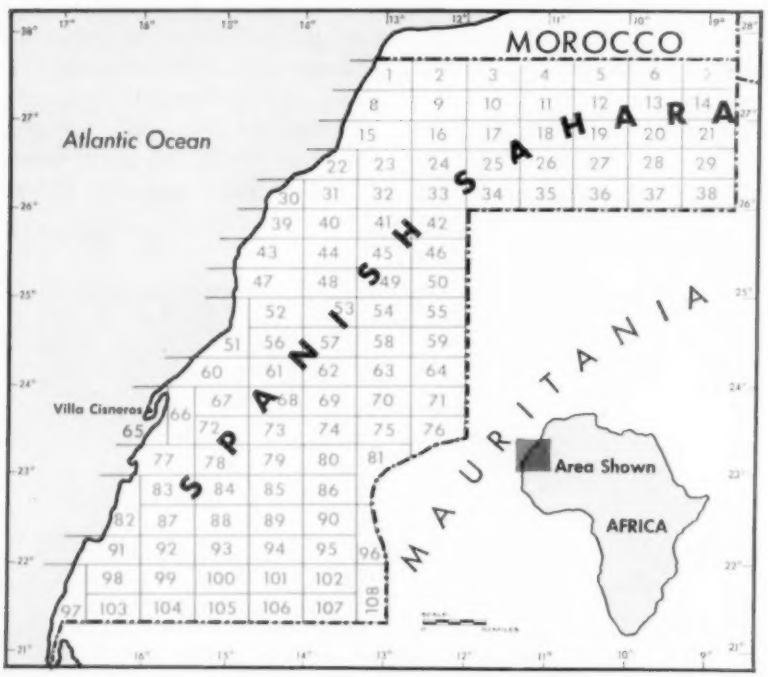
MEXICO—A new discovery, testing at the rate of 1,680 b/d, has been made about 1 mi. offshore from the state of Tabasco in southwest Mexico, according to Pascual Gutierrez Roldan, Director General of Pemex, and Edwin W. Pauley. The well tested 38-gravity oil through a small choke from the Miocene at 7,000 ft. Pay was reportedly encountered in other zones up to 10,000 ft. A Pauley company is drilling offshore wells for Pemex under a revenue-sharing contract.

•

TURKEY—Bolsa Chica Oil Corp. has suspended its No. 2 Hazro at 892 ft. because of floods from heavy rains. The test is located about 3,000 ft. northeast of No. 1 Hazro, which was recently abandoned at 4,050 ft. after negative drillstem tests at 1,156 ft.

•

IRAQ—The government is slashing the share of its oil revenues devoted to development projects from 70% to 50% this year. It's a temporary move to meet a $92.1-million deficit in Iraq's record $291.2-million budget for 1959, says Finance Minister Mohammed Hadid.



The Spanish Sahara Is Divided for Bidding

This is a preliminary draft of the block divisions of the Spanish Sahara, which the Spanish government will open for applications by number this month. Few, if any, changes are expected in the map when the government officially issues regulations and maps delineating the tracts by mid-June (PW—May22'59,p35).

The blocks are divided into numbered rectangles, in most cases, measuring 40 minutes of longitude in width by 20 minutes of latitude deep. Each company can get up to 16 permits, totaling over 9.8-million acres. Some 20 companies, mostly from the U. S., are interested in applying under Spain's new oil law.

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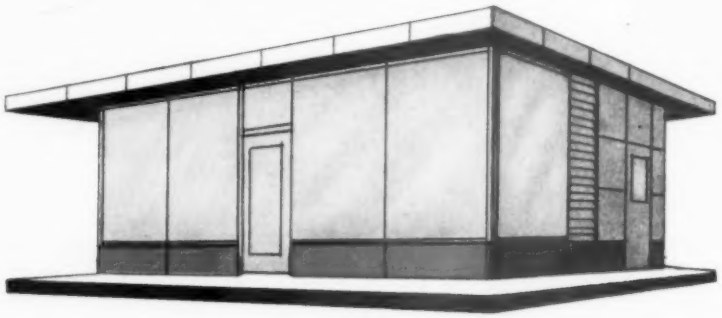

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DEPT/Marketing

A MONORAIL on a Los Angeles freeway would look like this, according to Northrop Corp. City planners think the monorail may be an answer to mounting traffic congestion. This problem also worries oil companies, which are beginning to realize that . . .

Too Many Cars Are a Threat to Demand

What will happen when there are simply too many cars for the nation's highways? That's a question some major oil companies are beginning to ponder. And with good reason:

The number of cars filling our big cities may approach the saturation point within the next 20 years. For example, if the present expansion continues in San Francisco, the city may be just one big parking lot by 1980.

In Los Angeles, 200 to 250 more cars enter the city every day. Almost one-third of the land area in Los Angeles is already covered by parking lots.

In New York, the trend toward more and more cars squeezing their way into the city also continues. A Regional Plan Assn. study shows that 36% more vehicles are driven downtown now than in 1948, when there were 375,000 more commuters.

The bumper-to-bumper traffic has become so frustrating in some areas that gasoline demand is beng affected. More and more, motorists are reluctant to drive their cars during rush hours, or in clogged Sunday traffic.

This view was expressed last week by a spokesman for Socony Mobil Oil Co. Esso Standard Oil Co. has also expressed "concern" over the growing commuter crisis. William Drout, manager of marketing economics for Esso, says the problem will become "increasingly critical as the years go by."

Even though the breaking point may still be years off, many city planners are desperately hunting for some means of public transportation to alleviate the congestion.

The monorail, a sort of overhead railway, may be the answer (picture). In Los Angeles, the Board of Supervisors is studying the Disneyland monorail, which has just begun to whisk tourists to the amusement park.

But monorail or not, the Supervisors have ordered that work on some sort of rapid-transit system must be started by May 1, 1960.

In Chicago, the tide has already begun to turn: A gradual tapering off in the use of the automobile is accompanied by expanding use of public means of transportation.

The number of private automobiles and taxis leaving the Chicago Loop during the peak traffic hour has actually fallen off by 1,500 since 1948. At the same time, daily commuting on suburban railways and the rapid transit system has increased by almost 14,000 passengers.

The trend toward greater use of public transportation in Chicago is, in part, a result of extensive efforts to improve facilities.

Although city planners are still widening the network of highways, both in Chicago and other big cities, many have found that efforts to alleviate the commuter problem by building more roads become self-defeating. Better roads only invite more commuters to drive their own cars into town. In 1950, the number of persons driving into Los Angeles averaged 2.4 per car. Now, with the trend toward two-car families, automobiles carry 1.4 riders.

As a result, the public carriers suffer from the loss of passenger revenue, and the big cities become swollen with more automobiles.

The congestion has become thickest in Los Angeles, where there are two cars for every five residents.

"Los Angeles can no longer afford the luxury of private transportation," says J. Edward Martin, a partner in a Los Angeles architectural and engineering firm. But Martin admits that no form of public transportation is going to replace the automobile unless city planners can overcome a formidable psychological factor.

The commuter wants the "sense of independence and personal dignity that a private automobile provides," says Martin.

But sooner or later the motorist will have to be deprived of these privileges, in the opinion of one expert.

"Our people thus far have continuously preferred private conveyances, and we have endeavored to accommodate them," says S. S. Taylor, general manager of Los Angeles traffic. "But this cannot go on forever. We will run out of space."

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Jobbers Soften Attack on Suppliers

The National Oil Jobbers Council opened its midyear meeting in Des Moines last week with outspoken protests against the actions of suppliers.

Miles M. Mills, president of NOJC, lashed out against "a number of top companies" that want to "impose their thinking and marketing philosophies on their jobbers" in order to "preserve a favored position for the integrated suppliers."

Mills singled out certain practices that "would appear to indicate that the suppliers do not intend to give relief to marketing." Among them: overbuilding of service stations; excessive refinery throughput; and the direct supplying of commercial accounts below the jobber's own costs.

Otis H. Ellis, the vitriolic General Counsel of NOJC, fired the second barrage against suppliers with a threat to carry jobbers' complaints to Washington if suppliers persist in ignoring the jobber's attempts to settle differences within the industry.

But by mid-week, when the jobbers and suppliers (also in Des Moines, for the midyear meeting of API's Marketing Division) sat down together at a joint panel of the API Jobber Advisory Committee, the fire had cooled in the jobber eye.

At the end of the uneventful panel discussion, Stanley D. Breitweiser, executive vice-president of D-X Sunray Oil Co., asked jobber F. J. Schuster: "Are we making any headway in improving jobber-supplier relations?" Schuster admitted that, although there was still much to be desired, relations had improved.

Earlier, Leslie Neal, Chairman of NOJC's Jobber Development Committee, told his fellow jobbers that they were responsible for lumping all suppliers in the same category, and for wasting time in attacking them all on such questions as consumer accounts and reduced margins. He said that there were more important matters, such as the increasing state gasoline taxes, that should occupy jobbers' attention.

It became increasingly apparent that, despite their opening protests, the jobbers are sincere in wanting to settle their problems with their suppliers without running to the government for help.

Through most of its general sessions and closed committee meetings, NOJC consistently re-echoed the sentiment that government intervention would only boomerang to hurt the entire industry. The jobbers, therefore, voted to oppose the Humphrey-Harris fair trade bill (PW—Apr.17'59,p62), S-11 (the anticompetition bill), and others which, they feel, invite government control of the oil industry.

The jobbers also refused to use the divorcement issue and their opposition to import controls as weapns against their suppliers.

In attempting to gather information on the question of divorcing marketing from the rest of the oil industry, the jobbers decided "to request API to have a competent national auditing firm study the marketing profits of the integrated companies." This move is an attempt to discover whether or not suppliers really are subsidizing their marketing operations with profits from other segments of the industry.

Many jobbers feel they have no right to ask API to make this study when the jobbers themselves mostly failed to answer the $20,000 questionnaire on jobber finances sent out by API last fall. Nevertheless, NOJC rejected a proposal to ask the Federal Trade Commission to make the study if API refuses.

The jobbers recognize certain trends in oil marketing that appear to be impinging upon their security as independent businessmen. But few of them feel that these trends have gone far enough to warrant drastic steps on a national basis.

Practically all the jobbers interviewed by PETROLEUM WEEK at Des Moines could cite instances in which their suppliers were making jobber operations less profitable. The most frequent complaint centered on the loss of commercial accounts.

But a great many jobbers were obviously surprised nevertheless when they heard their president say, "I do not recall any time when the prospects for the independent marketer have looked more bleak."

What's New / IN MARKETING

Swezey Fuel Co., an old-established heating oil reseller on Long Island, became an Esso branded distributor on June 1 (PW—May29'59,p100). The company, which sells about 20-million gal. annually, owns and operates a 3-million-gal. barge plant at Port Jefferson and has storage facilities for about 500,000 gal. at Patchogue, L.I.

•

More than 80% of Americans planning vacation trips during the next year will travel by car.

According to statistics compiled by the Institute for Social Research of the University of Michigan, the planned mode of travel is influenced by two main factors: the number of people in the party, and the distance to be traveled.

For shorter trips, (up to 2,000 mi.), the great majority will use their cars. For trips of over 2,000 mi., 40% will still travel by auto. The next largest group (26%) will fly.

Only one of every four persons traveling alone expects to drive. But over 90% of those planning larger groups of three or more will travel by automobile.

Consumption of gasoline in the U.S. hit a record peak of 59.2-billion gal. in 1958, a jump of 1¾-billion gal. over the 1957 high, according to the annual consumption report of the American Petroleum Institute. The estimates, based on figures supplied by state governments, reflect all gasoline sales, whether for taxable or tax-exempt purposes.

California ranked first among the states, with Texas and New York second and third, respectively. In all, 22 states now consume a billion or more gallons of gasoline a year each.

As in previous years, API found that the May-to-October period saw the biggest consumption, with July the peak month.

•

Detroit and the oil industry can't agree on crankcase oil drain periods.

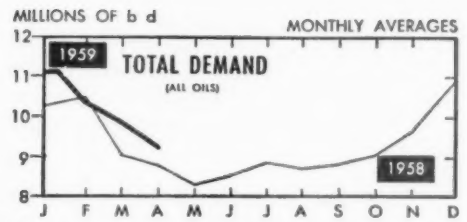
Ford still believes that 4,000-mi. oil drain recommendations have important appeal for new car buyers. Other car-makers say they may have to match Ford's recommendations.

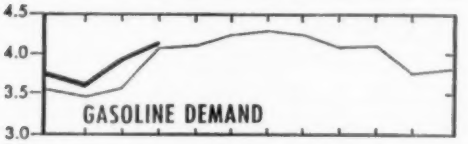
Oil men, faced with the tapering-off of lube sales (PW—May15'59, p146), want Detroit to accept a 2,000-mi. drain recommendation.

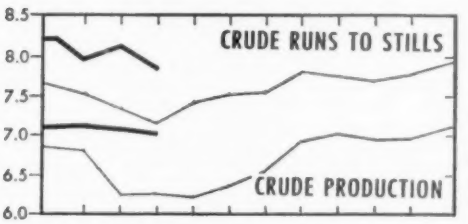
creasingly critical as the years go by." more roads become self-defeating. We will run out of space."

PETROLEUM WEEK'S

Fingertip Figures





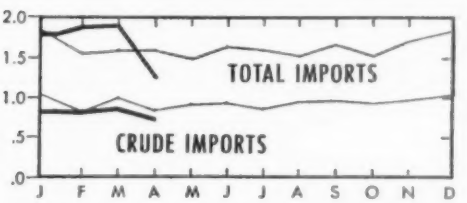


RUNS TO STILLS

Latest week	7.888
Previous week	7.891
Year ago	7.487

CRUDE PRODUCTION

Latest week	7.203
Previous week	7.213
Year ago	6.241

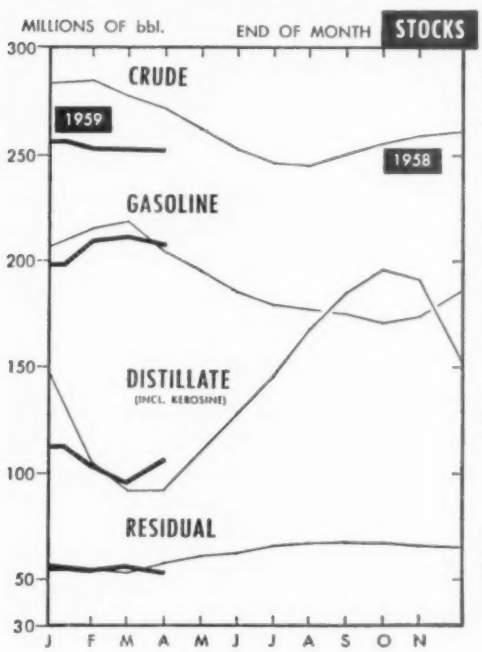


TOTAL IMPORTS

Latest week	1.357
Previous week	1.363
Year ago	1.226

CRUDE IMPORTS

Latest week	.825
Previous week	.860
Year ago	.756



CRUDE STOCKS

Week ended 5-23	262.3
Previous week	259.1
Year ago	269.8

GASOLINE

Latest week	203.1
Previous week	203.6
Year ago	193.4

DISTILLATES

Latest week	121.6
Previous week	117.0
Year ago	109.4

RESIDUAL

Latest week	54.7
Previous year	54.5
Year ago	61.4

Supply-Demand Figures for May

(millions of b/d)

	May 1959	% Change from year ago	5 Months 1959	% Change from year ago
Total Demand (Inc. Exports)	8.926	+ 7.5	10.022	+ 6.2
Gasoline	4.246	+ 3.4	3.952	+ 5.4
Distillates (Inc. Kerosine)	1.493	+ 6.9	2.543	+ 2.2
Residual	1.387	+12.8	1.808	+13.9
Total Supply	9.398	+10.8	9.857	+10.7
Domestic Crude	7.190	+15.4	7.181	+10.7
Nat. Gas Liquids	.850	+13.8	.861	+ 9.4
Total Domestic	8.040	+15.2	8.042	+10.5
Crude Imports	.854	— 8.7	.896	— 4.2
Total Imports	1.358	— 9.8	1.815	+11.2

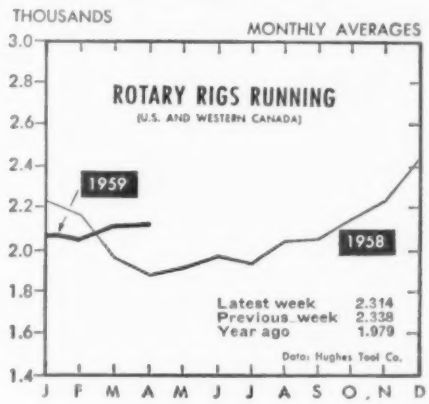
Total demand in May was up to the level expected by most economists, showing a 7.5% gain over 1958. And new supply was also up to expectations, exceeding demand by 472,000 b/d.

The performance in May was attributable to a strong rise in demand for burning oils, with residual demand up 12.8% over last year and distillates demand up 6.9%.

Gasoline demand, which has been a pace setter so far this year, was up 3.4% in May, a bit lower than the earlier 1959 trend. But despite the demand pattern, gasoline stocks last month declined only 6-million bbl., compared with a 9-million bbl. decline last year.

The statistics for the month give indication that, despite some optimistic predictions for new supply for the rest of the year, an oversupply is shaping up fast.

So far, the pace of demand has been strong enough to prevent the general inventory pattern from turning excessive. But stocks are above what industry experts say are "desirable" levels.



The Market Trend

AT-A-GLANCE Copyright PETROLEUM WEEK

It's Hard to Find a Firm Price Nowadays

There is still a lot of crude and products around this week. And almost every market report has the word "softness" in it somewhere.

Prices are falling further, or are about to, in the Midwest, along the East Coast, and down at the Gulf. This week the Midwest appeared softest as gasoline, distillates, and heavy fuel prices broke. The prospect of a steel strike this summer could throw a wrench in the market for low-sulfur residual, too.

On the East Coast, marketers appear to be waiting for another break in prices for heating oils. Resellers are buying almost no distillates these days. Suppliers appear to be waiting for a "floor" to find itself at the Gulf before making reductions.

The Gulf cargo market is weak on both gasoline and heating oils. In a "posted" 8.625¢ market for No. 2 fuel, it's likely that the next sale may click off at 8.25¢. Canadian buyers who are looking at both the Gulf and Caribbean for summer shipments are waiting for lower prices—probably somewhere around 8¢.

Crude markets are easy, too, despite the reduced allowables for June. Three Texas buyers have a surplus for June totaling about 29,000 b/d. Four other buyers may need an extra 25,000 b/d in aggregate, but will probably pull it from storage.

And when the wholesale markets are soft, all kinds of special deals are fostered. Truck-lot buyers are getting barge prices. Barge buyers get cargo prices. In New Jersey, one private-brander was selling gasoline so low (8¢ below "fair-trade") that a supplier put a "tail" on his trucks to find his source. (N.B.—The gasoline probably came from western Pennsylvania.)

Last week, a contract was closed to deliver No. 2 fuel from the Gulf to New York at 0.375¢ below the prevailing contract cargo prices. The paradox in this kind of selling is that as the discounts grow in volume, the so-called "prevailing" prices get less prevalent. Sooner or later, everybody will have a special discount, and nobody will be happy.

A Summer–Winter Deal:

An offering of three summer cargoes and five winter cargoes of No. 2 fuel was made this week for delivery to the East Coast from the Gulf. There was an attractive discount, too.

But buyers mostly shied away. The summer cargoes called for spot cash payment, with no price protection against declines before fall.

Low-Sulfur No. 6:

Watch out for the low-sulfur residual market in the Midwest if steel strikes occur this summer. If the mills shut down, a lot of 1% material will be thrown on the market. The result could be strong pressure on prices for ordinary bunker oil.

Foreign Crude:

An offering of about a million barrels of "quota" crude, presumably from Venezuela, is offered for East Coast delivery in the last half of this year. The oil is price-tagged at $3.10 a bbl., delivered.

The Market Place AROUND THE WORLD

Prices compiled for PETROLEUM WEEK by Platt's OILGRAM Price Service and National Petroleum News, McGraw-Hill Publications

All prices as of June 1

Bold face type indicates changes from previous week

KEY PRICES—REFINED PRODUCTS

(¢ per gal. except dollars per bbl. where $ is shown)

Western Hemisphere

U. S. Gulf Coast, cargoes
- Gasoline, 98 oct prem....11.75-13
- Gasoline, 92 oct reg....10.5-11.5
- **Kerosine....8.75↓-10.375**
- **Heating oil, No. 2....8.25↓-9.875**
- **Gas oil, 48-52 d.i....8.5↓-10.125**
- Fuel oil, bunker "C"....$2.00-2.10

Caribbean, cargoes
- Avgas, Grade 100/130....16
- Gasoline, 93 oct research prem....10.75-11
- Gasoline, 87 oct research reg....9.875-10.125
- Gasoline, 79 oct research....9.125
- Gasoline, 70-72 oct motor method....9
- Kerosine....9.375
- Heating oil, No. 2....8.625
- Gas oil, 48-52, d.i....8.875
- Fuel oil, bunker "C"....$2.00

New York Harbor, barges
- **Kerosine....10.5↓**
- **Heating oil, No. 2....9.75↓-10↓**
- Fuel oil No. 6....$2.37-2.45

Okla-Group 3, northern shpt., bulk
- **Gasoline, 89 oct reg....11.5-12.25↓**
- **Kerosine....10↓-10.5↓**
- Heating oil, No. 2....9-9.25
- **Fuel oil, No. 6....$1.60↓-1.80↓**

Chicago, bulk
- **Gasoline, 91 oct reg....11.5↓-11.75↓**
- **Heating oil, No. 2....9.75↓-11.35**
- Fuel oil, No. 6 high sulfur....7.4-7.5

Los Angeles, rack
- Gasoline, 88 oct reg....12-12.65
- Diesel fuel, PS 200....8.5-11.25
- Light fuel, PS 300....$2.80
- Heavy fuel, PS 400....$2.15-2.35

Natural Gasoline, Grade 26-70
- FOB Group 3....4.5
- FOB Breckenridge, Tex....4

LP-Gas
- Propane, Oklahoma (Group 3)....4

Pennsylvania Lubes
- Bright stock, 25 p.t....22
- 200 vis. neutral, 25 p.t....21

Mid-Continent Lubes, Tulsa basis
- Bright stock, solvent 95 v.i....23-24
- Neutral, solvent, 200-210 vis....19.5-20.5

Gulf Coast Lubes
- Bright stock, solvent, 95 v.i....24
- Neutral, solvent, 200 vis....20.5

Eastern Hemisphere

Singapore (Pulau Bukom), cargoes
- Avgas, grade 100/130....17.25
- Gasoline, 79 oct research....9.75
- Kerosine....10.75
- Gas oil, 48 d.i. minimum....10.375

KEY PRICES—CRUDE OIL

(2¢ differential per deg., of grav. applies except as noted)

Western Hemisphere

United States (at the well)
- Mid-Continent, 36.0-36.9....$2.77-2.97
- North Dakota, 36.0-36.9....2.62-2.87
- Texas:
  - Gulf Coast, low cold test, 26.0-26.9....3.50
  - Gulf Coast, Upper & Lower, 26.0-26.9....2.92-3.22
  - West Texas, sweet, 36.0-36.9....3.00
  - West Texas, N. M., inter., 36.0-36.9....2.93
  - West Texas, N. M., sour, 32.0-32.9....2.71
  - East Texas, flat....3.25
  - Mirando, 28.0-28.9....3.31
- Illinois Basin, flat....3.00
- Pennsylvania Grade, Bradford dist., flat....4.25
- California, Signal Hill, 21.0-21.9....2.50-2.541
- North Louisiana-Arkansas, 36.0-36.9....2.77-3.02
- Wyoming, sweet, 36.0-36.9....2.85-2.90
- Wyoming, sour, 32.0-32.9....2.63-2.71

Canada (flat prices, at the well)
- Acheson-Stony Plain (Alta.)....$2.47
- Leduc-Woodbend (Alta.)....2.53
- Redwater (Alta.)....2.42
- Daly (Man.)....2.21
- Smiley (Sask.)....2.18

Venezuela (Cargoes, FOB lifting port designated)
- Cumarebo, 47.0-47.9, Tucupido....$3.34
- San Joaquin, 41.0-41.9, Puerto la Cruz....3.10
- Oficina, 35.0-35.9, Puerto la Cruz....2.78-2.80
- Tia Juana, Medium, 26.0-26.9, Amuay....2.30
- Bachaquero, flat, Las Piedras....1.73-1.88
- Tarra, 38.0-38.9, San Lorenzo....2.83
- Lagunillas Heavy, flat, Cardon....2.10

**Differential per deg. of grav. varies.*

Eastern Hemisphere

Middle East, Persian Gulf (Cargoes, FOB lifting port)
- Arabia, 34.0-34.9, Ras Tanura....$1.89-1.90
- Safaniya, 27.0-27.9, Ras Tanura....1.50
- Iran, 34.0-34.9, Bandar Mashur....1.86-2.04
- Iran, 34.0-34.9, Abadan....1.81
- Iraq, 35.0-35.9, Fao....1.80
- Kuwait, 31.0-31.9, Mina-al-Ahmadi....1.67
- Qatar, 41.0-41.9, Umm Said....2.05
- Neutral Zone, Burghan, 23.5-24.4, Mina Saud....1.51
- N. Zone, Eocene-Ratawi, 20.5-21.4, Mina Saud....1.38

Middle East, Eastern Mediterranean
- Arabian, 34.0-34.9, Sidon....$2.27
- Iraqi, 36.0-36.9, Tripoli, Banias....2.31

Far East, Cargoes, FOB Lutong, Sarawak
- Seria Light, flat....$2.57

KEY TANKER RATES

(Last paid, per long ton, single voyage)

- **U. S. Gulf-New York, clean (USMC—22½%) $2.21↓**
- **U. S. Gulf-New York, dirty (USMC—27½%) $2.07↑**
- NWI-USNH, dirty....(USMC—62½%) $1.01
- NWI-UK Cont., dirty....(Scale—30%) 22/9*
- Persian Gulf-UK/Cont., dirty....(Scale—70%) 20/10*
- Persian Gulf-USNH, dirty....(USMC—75%) $3.18

**Sterling*

EARL L. COULTER has been named to the newly created position of vice-president of the sales supply division of Western Supply Co., with offices in Tulsa. Coulter's sales duties will be concerned with oil field supplies, and with the expansion of oil country pipe stocks. His new position is a result of Western's plan to expand its oil field supply activities. He has been in the oil field supply business in Texas and Oklahoma since 1941.

G. L. Huestis

E. L. Coulter

G. L. HUESTIS has joined Bennett Supply Co. as vice-president and general sales manager, with offices in Midland, Tex. He was most recently division manager of the West Texas-Southeast New Mexico division of Mid-Continent Supply Co.

HUGH C. NEWTON has been named assistant director of public relations for Rockwell Mfg. Co., in Pittsburgh. He joined Rockwell in January and, prior to that, was Rockwell's public relations representative as an account executive of Burson-Marsteller Associates.

FRANK WHEATLEY SUPPLY, sales subsidiary of Frank Wheatley Pump & Valve Manufacturer, Tulsa, has been renamed Frank Wheatley Corp. **Gus Baker, Jr.,** vice-president of the sales subsidiary, has also been named executive vice-president of the parent company. **Huber Dye,** vice-president and general manager of the sales company, assumes additional advisory duties as vice-president of the parent. **William Gray,** shop superintendent for the parent company, has also been appointed special advisor to the parent company manager. **A. R. (Blondie) Parker** has joined the staff of the subsidiary. He was formerly associated with Mission Mfg. Co., Mud Products Co., and, most recently, the Baroid Division of National Lead Co.

WILLIAM THOMPSON, formerly assistant chief inspector of Fluor Corp., Ltd., has been promoted to chief inspector. He joined the company in 1951 as an inspector, and became assistant chief inspector in 1953. In his new position, he will report to **E. C. Austin,** vice-president of procurement.

W. Thompson

E. G. Hotze

ERNEST G. HOTZE is the new Southwest district manager for Clark Bros. Co., one of the Dresser Industries. In his new position, Hotze will be responsible for the sale of Clark engines, compressors, and gas turbines in Texas (excluding the Panhandle), Mississippi, Louisiana, southern Arkansas, and southern New Mexico. Hotze, with Clark since 1942, was most recently Houston district manager. **Joe Y. Allen, Jr.,** formerly assistant district manager in Houston, succeeds Hotze as manager there. Allen will be in charge of the Houston and Corpus Christi offices, which serve the Texas Gulf Coast. **James R. Hutton** is district manager of the newly created Louisiana-Mississippi district. He was formerly Clark's Shreveport (La.) branch manager. Allen and Hutton will both work under the supervision of Hotze.

JONES & LAUGHLIN SUPPLY DIVISION has given new assignments to eight men in its field service force. Six salesmen transferred to different stores or sales offices are: **R. J. Bevington,** formerly salesman at Freer, Tex., to McAllen, Tex.; **R. D. Landis,** from Alice, Tex., to Freer; **C. L. Wallace,** from Houma, La., to Brookhaven, Miss.; **B. W. Ramsey,** from J&L's Lake Charles (La.) store to Houma; **H. E. Reeves,** from Brookhaven to Natchez, Miss.; and **D. R. McKown,** from Williston, N. D., to J&L's Houston sales offices. **P. A. Toomey,** storeman at Williston, has been promoted to salesman there. **T. D. Gholson,** a recent graduate of J&L's sales training program, has been assigned as salesman at the Houston sales office.

NEAL DWYER is the new sales and equipment engineer of United Engines, Inc., Shreveport, distributor of diesel and gas engines to the oil industry. Dwyer has been associated with Cardwell Mfg. Co. as a design engineer in the research and development department. In his new position, he will assist United's sales department and will be responsible for engineering and application techniques.

N. Dwyer

T. P. Nelms

T. P. NELMS is manager of Republic Supply Co.'s new South Texas district, in Corpus Christi. The district was created from the Houston-South Texas district by removing Houston as district headquarters. At the same time, Nelms also becomes manager of the new Corpus Christi sales office. He has been with Republic since 1945. **Harold C. Hoggard** is a new member of Republic's machine sales division in Oklahoma City. He was most recently supervisor in the rig repair and heavy duty shops in Anaco, Venezuela, for Socony Mobil Oil Co.

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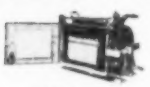
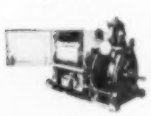


1,000 ft. Unit

2,000 ft. Unit



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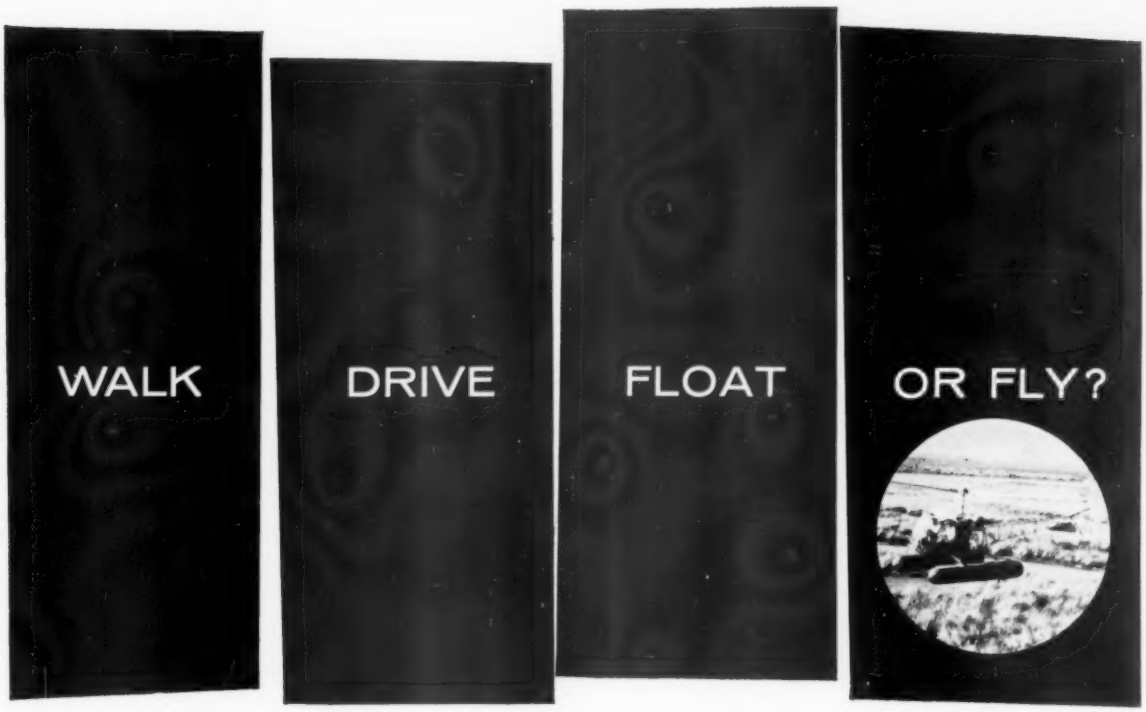

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ADVERTISERS IN THIS ISSUE

Aero Service Corp.	53
American MARC, Inc.	27
Avoncraft Div. Avondale Marine Ways, Inc.	58
Baker Oil Tools, Inc.	22
Bank of Montreal	20
Baroid Div. National Lead Co.	30
Bell Helicopter Corp.	65
Burroughs Corp.—Electro-Data Div.	39
Cameron Iron Works Inc.	4
Chicago Bridge & Iron Co.	51
Clevite Corp.	25
Davison Chem. Div. W. R. Grace & Co.	42
Dowell	Cover 4
Engineered Oil Tools, Inc.	6
Ethyl Corp.	1
Ethyl Corp., Chem. Div.	47
Fenix & Scisson Inc.	24
First National Bank & Trust Co. of Tulsa	54
Foster Wheeler Corp.	40-41
Gardner-Denver Co.	29
Geophysical Service Inc.	37
Graver Tank & Mfg. Co.	53
Harbert Construction Corp.	49
Hendrick Mfg. Co.	31
Houdry Process Corp.	46
Houston Oil Field Material Co.	Cover 3
Houston Ready-Cut House Co.	32
International Business Machine Corp.	10-11
Martin Decker Corp.	2
New York Life Insurance Co.	57
Oil Center Tool Co.	12
Polyken Prods. Div. Kendall Co.	45
Porta-Kamp Mfg. Co.	36
Rogers Geophysical Cos.	33
Royal Bank of Canada	9
Schlumberger Well Surveying Corp.	Cover 2
Solar Aircraft Co.	5
L. Sonneborn Sons, Inc.	43
U. S. Rubber Co.	19
Warren Petroleum Corp.	24
Well Instrument Developing Co.	64
Youngstown Sheet & Tube Co.	34-35

Professional Services	67

Classified Advertising
F. J. Eberle, Business Mgr.

Employment Opportunities	67

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Huntley 2-5450

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Oxford 5-5959

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DEPT/Personals

L. D. McClatchey

G. L. Gano

L. D. McCLATCHEY and **GORDON L. GANO** have been named vice-presidents of Cities Service Refining Corp., Lake Charles, La. McClatchey came to Lake Charles in 1944 as assistant treasurer, and has been treasurer since 1945. Gano has served as manager of the crude oil marketing department since 1943. **C. W. Adams**, formerly assistant treasurer for Cities Service Refining, succeeds McClatchey as treasurer.

THOMAS G. ROBERTS, formerly senior staff engineer in charge of economics and evaluation for British-American Oil Producing Co., Dallas, has joined Norman J. Clark Engineering, Dallas consulting firm, as a senior associate. He will engage in property evaluation of primary and secondary recovery projects, including waterflooding and miscible drive.

D. M. LILES, manager of Pan American Petroleum Corp.'s Ulysses (Kan.) plant, has been elected vice-chairman of the Kansas Petroleum Industries Committee. He succeeds **C. E. Muellerleile**, Cities Service Oil Co., who was recently transferred from Wichita to St. Louis. **K. W. Bumgarner**, manager of exploration for Gulf Oil Corp., Wichita, has been named to KPIC's executive committee.

N. C. Simpson

I. G. Davis

I. G. DAVIS has been named senior vice-president of Gulf Oil Corp., and **N. C. SIMPSON** succeeds him as Gulf's administrative vice-president, production. Davis also becomes a member of the company's executive group, which consists of the president, executive vice-president, and the senior vice-presidents. Davis joined Gulf in Venezuela in 1934. Four years later, he joined Mene Grande Oil Co., Gulf's Venezuelan subsidiary, and in 1956 became president of that company. He became administrative vice-president, production, and coordinator of Gulf's production department in 1958. Simpson, who will also be chairman of the production council, joined Gulf in 1933. In 1953, he was named production manager in Houston, and in 1955 was transferred to Pittsburgh as operations coordinator, production department, western hemisphere. He became manager of the Tulsa production department in 1957, and in 1959 moved to the newly created Houston headquarters of Gulf's domestic production department, where he has been departmental coordinator. Both men will be headquartered in Pittsburgh.

T. A. KIBBY succeeds **AUGUSTIN PYRE** as manager of western hemisphere exploratory operations for Gulf Oil Corp., with offices in New York. Pyre will join Gulf Eastern

J. H. Thacher, Jr.

G. T. Ballou

F. C. Boucke

JOHN H. THACHER, JR., is the new assistant to the chairman of Standard Oil Co. of California, and **FREDRIC C. BOUCKE** succeeds him as president of Iran California Oil Co., Standard's London subsidiary which manages the company's 7% interest in the Iranian Consortium. **GEORGE T. BALLOU** takes over Boucke's former duties as manager of Standard's eastern hemisphere staff in San Francisco, and as manager of Irancal and another subsidiary, California Asiatic Oil Co. Ballou was formerly vice-president of California Commercial Co., Standard subsidiary in New York, where he handled special assignments in connection with the company's Middle East interests. Thacher succeeds **H. D. Armstrong**, recently elected treasurer of Standard.

Co. in London as manager of exploration, succeeding **E. S. Bleecker,** who is retiring. Kibby joined Gulf Research & Development Co. in 1934 as a geophysicist, and in 1939 transferred to Mene Grande Oil Co., Gulf's Venezuelan subsidiary. He was most recently Mene Grande's assistant chief geologist, in Caracas. Pyre joined Gulf as a geologist with Mene Grande in 1937. Nine years later, he transferred to the New York production division office. In 1954, when Gulf Eastern was established, Pyre was appointed staff assistant to the exploration coordinator in London. He became manager of the New York exploration division in 1956.

F. P. Burns

J. G. Dickinson

C. B. Randall

K. Bentz

J. G. DICKINSON has been elected senior vice-president, and **F. P. BURNS, KEITH BENTZ,** and **C. B. RANDALL** vice-presidents, of Natural Gas Pipeline Co. of America. At the same time, **J. M. Durrett** was named assistant secretary of the company. Dickinson has been in charge of production activities from the Amarillo offices since 1930, and has been a Natural Gas Pipeline vice-president since 1949. Bentz was most recently assistant vice-president of operations in Chicago, and Burns was assistant vice-president for production, in Amarillo. Randall joined Natural Gas Pipeline in 1931, and has been director of taxes and insurance in Chicago. Durrett was most recently Amarillo office manager.

HENRY W. HINKLE has been appointed a member of the operating committees of Phillips Petroleum Co. and Phillips Chemical Co., a subsidiary, in Bartlesville, Okla. Hinkle is presently comptroller of the parent company, a position he has held since 1956.

DR. E. F. VOSS, Humble Oil & Refining Co., Houston, and **DR. J. C. GENIESSE,** Atlantic Refining Co., Philadelphia, received Certificates of Appreciation from API's Division of Refining on May 28. The certificates were given to the two men in recognition of long and valued service to API and to the oil industry. Voss is Humble's chief refinery engineer, and Geniesse is director of the application research division of Atlantic's research and development department.

C. N. Brooks

G. W. Orton

C. N. BROOKS has been elected vice-president, foreign operations, eastern hemisphere, and **GREER W. ORTON** treasurer, of Texaco Inc. At the same time, **Stanley T. Crossland,** who joined Texaco in 1955 as vice-president and treasurer, was named vice-president, finance and economics. Brooks, with Texaco since 1928, has been general manager of the foreign operations department, eastern hemisphere, since 1956, and a director of California Texas Oil Co. since 1957. Orton was appointed Texaco's senior representative in London in 1954 and last year became assistant to Texaco's chairman. Before joining Texaco, Crossland was vice-president and a director of Reconstruction Finance Corp.

E. B. COLLINS will become manager of office service for Shell Oil Co., in New York, next Jan. 1, succeeding **H. C. Reed,** who retires then. On June 1 Collins assumed the interim appointment of assistant manager of office service. Collins was most recently assistant manager in Shell's marketing accounting department in New York. Before that, he was treasury manager in Cleveland.

E. B. Collins

J. P. Jones

JOHN PAUL JONES rejoins Standard Oil Co. (Ohio), Cleveland, as associate director of public relations. He joined Sohio in 1945 as chief of employee relations in the manufacturing department. In 1957, he was given a leave of absence to go to Iran as assistant to the head of the personnel division of the Iranian Oil operating companies, in which Sohio has an interest as a member of the Iranian Consortium. In his new position, Jones will be concerned with keeping employees and the public informed of Sohio's activities.

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Is It Compact or Cartel They Seek?

THERE WAS CONSIDERABLE TALK this week among those attending the New York City meeting of the Fifth World Petroleum Congress on hemispheric oil compacts, particularly the Western Hemisphere. The general opinion seemed to be that the compact should be fashioned along the lines of the one among the oil producing states in this country—The Interstate Oil Compact.

But were they talking about a compact based on the principles of conservation, or an agreement among nations that would permit the control of prices—an international cartel?

The Interstate Oil Compact was entered into as a roadblock against federal encroachment into state authority in oil and gas conservation. It is wholly voluntary, and is entirely without power except the power of enlightened public opinion.

And as for the principle of price controls, Article V of the Compact states:

"It is not the purpose of this Compact to authorize the states joining herein to limit the production of oil or gas for the purpose of stabilizing or fixing the price thereof, or to create or perpetuate a monopoly, or to promote regimentation, but is limited to the purpose of conserving oil and gas and preventing the avoidable waste thereof within reasonable limitations."

IT WOULD BE MOST HELPFUL in the advancement of solidarity if all of the Western Hemisphere oil-producing countries practiced conservation on the principle set out in the Compact. For, through proper conservation, wasteful practices in the production of oil could be halted or held to a minimum.

But, at the same time, it would be most harmful if, under the guise of a compact, agreements were made among Western Hemisphere nations solely for the purpose of controlling production and prices.

In fact, such arrangements, in the end, would result in hostility among the participating nations rather than solidarity. Such arrangements also would be much too binding on individual countries and, at the same time, would greatly interfere with the ability of companies to adjust operations to changing developments.

But by whatever name it may be called—compact or cartel—the United States government would do its domestic industry a great injustice should it try ever to enter into an agreement with other nations to control the production or price of oil produced in its sovereign states.

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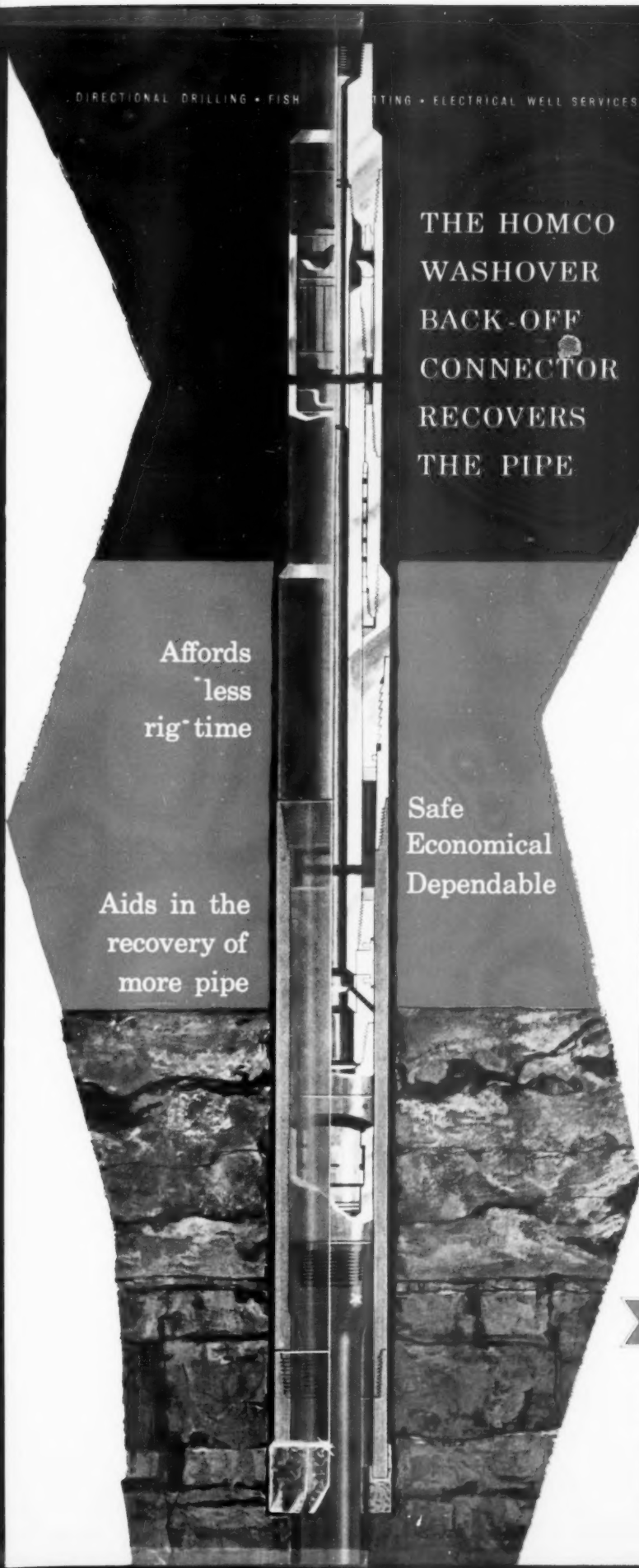

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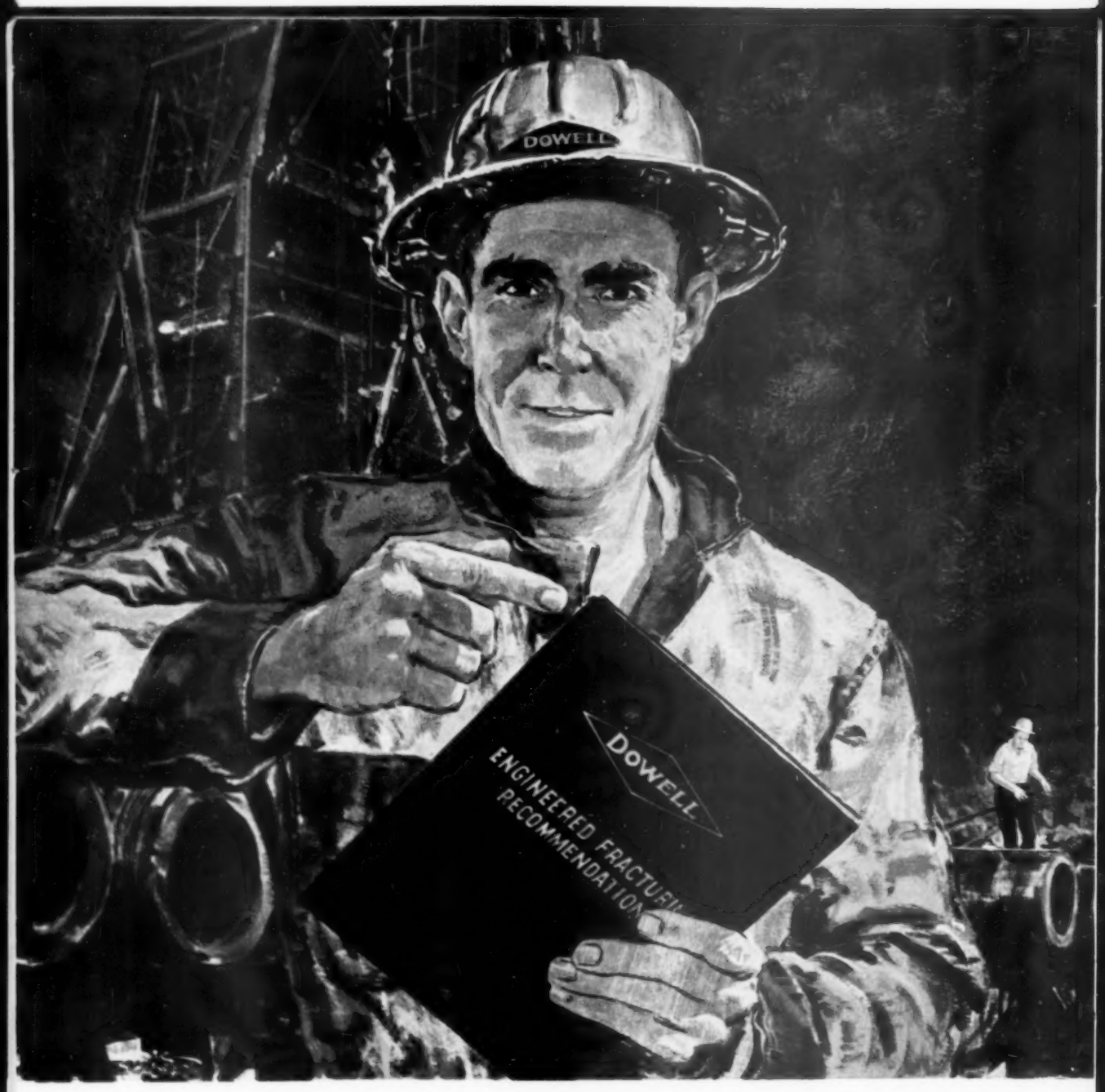

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